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Main Street Traffic Operations Study

City of Dexter, Michigan

August 2017

INTRODUCTION

The purpose of this study is to evaluate the reports of congestion and poor operations at the intersections of Baker Road and Main Street and Broad Street and Main Street in Dexter. The study provides analysis of the intersections using existing traffic volumes to determine which operational improvements would best serve the community's immediate traffic needs. The study will investigate various operational alternatives to improve mobility in downtown Dexter for the near future.

TRAFFIC INFORMATION

Traffic data was collected as part of this study. The traffic counts were conducted on June 1, 2017 to provide updated volumes throughout the study area. The morning peak period occurs between 7:30 AM and 8:30 AM, and the afternoon peak occurs between 4:45 PM and 5:45 PM. Existing traffic volume data can be found in Appendix A.

EXISTING CROSS SECTIONS

Main Street runs east/west and has a posted speed limit of 25 mph and an average annual daily traffic (AADT) of approximately 11,700 vehicles (bi-directional) between Broad Street and Baker Road. The existing section between Broad Street and Central Street is a three-lane street with a marked center two-way left-turn lane (TWLTL) and angled on-street parking on both sides. The existing section between Central Street and Baker Road is a three-lane street with no on-street parking allowed in either direction. Sidewalk is present along both sides of the road from Broad Street to Baker Road. The surrounding area is the central business district of the City of Dexter.

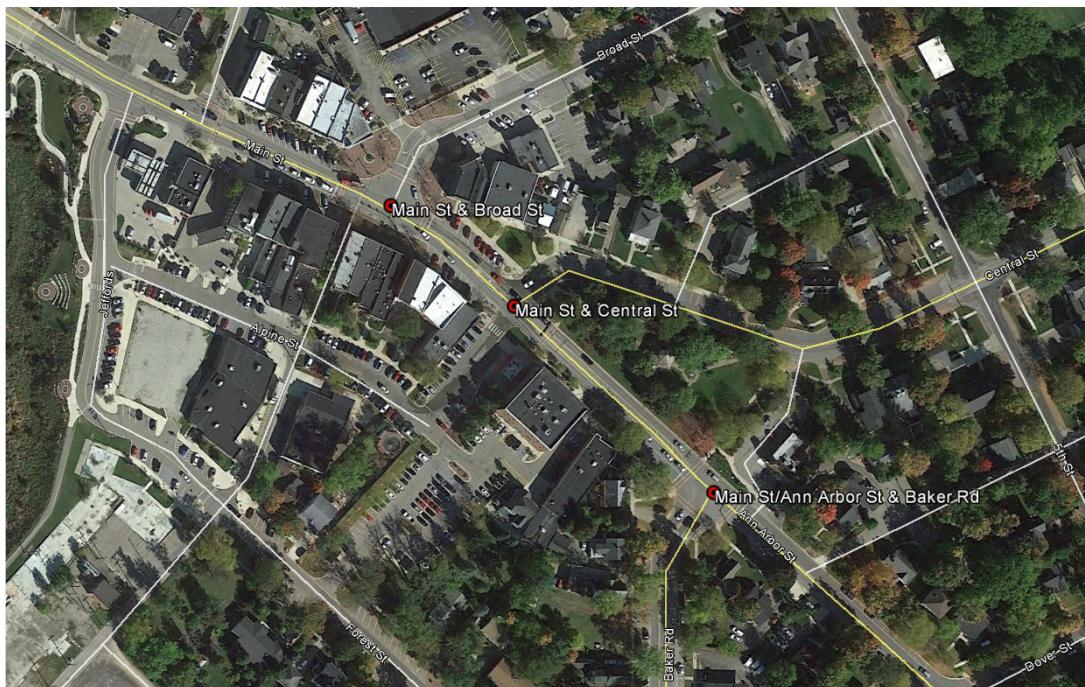


Figure 1: Study Intersections

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Broad Street forms a “T”-intersection with Main Street, and runs north of Main Street. It has a posted speed limit of 25 mph and an approximate AADT of 3,000 vehicles. The existing section is a two-lane street with angled on-street parking on both sides. Sidewalk is present along both sides of the road. The land use along the Broad Street roadway segment in the vicinity of the intersection is primarily commercial land use.

Central Street is a minor street STOP-controlled intersection with Main Street between Broad Street and Ann Arbor Street and acts as a route out of the downtown area. Central Street has a posted speed limit of 25 mph with an approximate AADT of 1,600 vehicles. Just north of the intersection, the land use is primarily residential with perpendicular on-street parking in the southbound direction. Just south of Main Street, the land use is entirely commercial with perpendicular on-street parking in both directions.

Baker Road forms a “T”-intersection with Main Street, and runs south of Main Street. It has a posted speed limit of 30 mph and an approximate AADT of 5,400 vehicles. The existing section is a three-lane street with parallel on-street parking on both sides. Sidewalk is present along both sides of the road. The land use along the Baker Road roadway segment in the vicinity of the intersection is primarily residential land use.

INTERSECTION ANALYSIS BACKGROUND

The intersections within the study area were analyzed according to the methodologies published in the Highway Capacity Manual, 2010 edition. For this project, Synchro Version 9 software was used to conduct the analysis for all study intersections. Software printouts for the evaluations of intersections have been included in Appendix B. These software packages compute average delay values experienced by vehicles based on factors such as number and type of lanes, intersection controls such as STOP signs or traffic signals, traffic volumes, pedestrian volumes, signal timing characteristics, roadway grade, speed limit, etc. This value is an average across the entire peak hour; vehicles arriving during the busiest portion of the peak hour or arriving in a clustered group of vehicles instead of in a random pattern could experience longer delays. On the other hand, vehicles arriving during a lighter portion of the peak hour could experience a shorter delay. The average delay is used to determine the corresponding level of service (LOS) values for each intersection movement as well as the intersection as a whole.

LOS is expressed as a letter grade, in a range from A through F. In this context, ‘A’ represents the best conditions, with very little or no average delay to vehicles. LOS ‘F’ is the worst of conditions, equated with very large average delays and few gaps of acceptable length. Tables 1 and 2 identify level of service criteria for signalized and unsignalized intersections. An intersection LOS ‘D’ is considered by many traffic safety professionals to be the minimum acceptable condition in an urban/suburban area. For rural areas, most highway agencies consider LOS ‘C’ the minimum. Given the location of the study intersections, within an urbanized boundary, LOS ‘D’ or better was utilized as the study goal.

Table 1: Level of Service Criteria for Signalized Intersections

Level of Service	Average Delay/Vehicle (seconds)	Description
A	0 to 10	Most vehicles do not stop at all. Most arrive during the green phase. Little or no delay.
B	> 10 to 20	More vehicles stop than for LOS A. Still good progression through lights. Short traffic delays.
C	> 20 to 35	Significant numbers of vehicles stop, although many pass through without stopping.
D	> 35 to 55	Many vehicles stop. Individual signal cycle failures are noticeable. Progression is intermittent.
E	> 55 to 80	Considered to be the limit of acceptable delay. Individual cycle failures are frequent and progression is poor.
F	>80	Extreme and unacceptable traffic delays.

SOURCE: Transportation Research Board, Highway Capacity Manual 2010.

Table 2: Level of Service Criteria for Unsignalized Intersections

Level of Service	Average Delay/Vehicle (seconds)	Description
A	0 to 10	Little or no delay, very low main street traffic.
B	> 10 to 15	Short traffic delays, many acceptable gaps.
C	> 15 to 25	Average traffic delays, frequent gaps still occur.
D	> 25 to 35	Longer traffic delays, limited number of acceptable gaps.
E	> 35 to 50	Very long traffic delays, very small number of acceptable gaps.
F	>50	Extreme traffic delays, virtually no acceptable gaps in traffic.

SOURCE: Transportation Research Board, Highway Capacity Manual 2010.

Broad Street at Main Street

The T-intersection has an EB through lane and an exclusive left-turn lane, a WB shared through and right-turn lane, and in the SB direction exclusive left and right-turn lanes. The intersection is signal-controlled with a variable cycle length depending on time-of-day, split between three phases: 1) EB/WB thru movements, 2) SB, and 3) EB left-turn.

Central Street at Main Street

The minor street STOP-controlled intersection has an EB shared through and right-turn lane and exclusive left-turn lane, a WB shared through and right-turn lane with left-turns allowed from the TWLTL, and a single lane in both the NB and SB directions that allows all movements.

Baker Road at Main Street

The T-intersection has an EB through lane and exclusive right-turn lane, a WB through lane and exclusive left-turn lane, and in the NB direction exclusive left and right-turn lanes. The

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intersection is signal-controlled with a variable cycle length split between three phases: 1) EB/WB thru movements, 2) NB, and 3) WB left-turn.

EXISTING OPERATIONS ANALYSIS

The existing condition models were built in Synchro utilizing existing digital aerial photography to lay out the road network. Once the road network was laid out, traffic volumes, lane geometry, intersection controls, signal timings, etc. were entered into the models. The existing signal timing plans utilized an 80 second cycle length at both intersections during the AM peak, a 60 second cycle length at both intersections during the mid-day period, and a 90 second cycle length at Main Street and Broad Street and a 60 second cycle length at Main Street and Baker Road during the PM peak period. The existing signal timing permits are provided in Appendix C.

To the south of the intersection of Main Street and Baker Road, there are roundabouts planned for construction on Baker Road at the intersections with Dan Hoey Road and Shield Road / Dongara Drive. The Synchro models account for these roundabouts by bringing traffic into the model using a random arrival, just as the roundabouts would disperse traffic. When there are signals nearby (typically less than $\frac{1}{2}$ mile away), we would add them to the model if they tend to send platoons of traffic to the study intersections. In the case of the Dan Hoey Road signal along Baker Road, platoons do not tend to arrive at the Baker Road at Main Street intersection due to the distance of nearly $\frac{3}{4}$ mile and the high number of driveways, side streets and slowing of traffic for turning movements that tend break progression over such a distance. For these reasons, the intersection of Baker Road at Dan Hoey Road was not included in the model.

In creating the existing condition models, we try to make sure that the models replicate the existing field conditions. Using Synchro default values was causing the models to show delays that were much less than the actual field condition. Some parameters needed to be adjusted to better replicate the observed levels of congestion in the AM and PM peak periods. These parameters included coding an estimated number of parking maneuvers wherever on-street parking exists, allowing vehicles to enter a blocked intersection (such as at Central Street), and lowering the saturation flow rates on certain approaches. After calibrating the models, a validation check was completed by comparing actual traffic volumes input into Synchro with the SimTraffic simulations to make sure that the number of vehicles getting through the intersections aligned with the existing traffic counts. Appendix B contains the model validation results.

EXISTING OPERATIONS DISCUSSION

During a field visit, members from the OHM traffic group observed numerous complications to the existing flow of traffic, which include:

- Angled on-street parking on Main Street east and west of Broad Street
- At Central Street, motorists are stopping on Main Street and allowing vehicles to turn left in and out
- Numerous pedestrians in the downtown area are utilizing the pedestrian push-buttons at Broad Street to cross Main Street

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- OHM observed 50 pedestrians cross north or south at Broad Street and Main Street in the PM peak hour

Each of the above factors induces additional delay along the corridor due to intermittent vehicle stopping and by knocking the signals out of step due to pedestrian actuations. As previously mentioned, these factors were accounted for in the Synchro model calibration process to mimic field conditions.

Table 3 shows the approach and intersection LOS and corresponding delays for the existing conditions. As seen in, under existing conditions, the intersection of Main Street and Broad Street operates at a LOS C in both the AM and mid-day periods, while it operates at a LOS E in the PM period. Table 3 also shows that the intersection of Main Street and Baker Road operates at a LOS B in the mid-day and PM periods, while it operates at a LOS C in the AM period. Finally, the intersection of Main Street and Central Street operates at a LOS A in both the mid-day and PM periods, while it operates at a LOS B in the AM period. Intersection reports from the Synchro model for the existing condition are provided in Appendix B.

Some of the values in Table 3 do not seem to align with driver perception (i.e. why are the morning delays at Baker showing higher than the evening, when there are more observed traffic backups in the PM?). This can be explained by Synchro analyzing the intersections as if they are “standalone” intersections, rather than considering the effects of spillback queues downstream that are being caused by the Broad Street intersection. The SimTraffic simulations more accurately depict the interactions between these two intersections and indeed show longer queues in the PM peak model in the NB and WB directions at Main Street at Baker Road. The high westbound delay values for Main Street at Baker Road (during AM peak) are explained by heavy left-turn movements with a short “Protected-Only” left-turn phase. By simply optimizing the AM period splits, the delays dissipate.

As determined by the field visit and verified by the existing operations analysis, the movement considered the most concerning issue is westbound through traffic on Main Street in the PM peak period. Throughout the years, numerous efforts by the City have sought to improve westbound traffic progression in the afternoon. The current afternoon peak signal timing plan incorporates a 90 second cycle at Main Street and Broad Street, while a 60 second cycle is utilized at Main Street and Baker Road. This reduced cycle length was chosen, in part, at Main Street and Baker Road in an effort to “meter” or regulate the flow of westbound traffic at Baker Road to allow westbound queues to clear through the downtown. The proposed operations analysis will look to determine whether or not the cycle lengths should instead be the same at both intersections in an effort to coordinate the intersections.

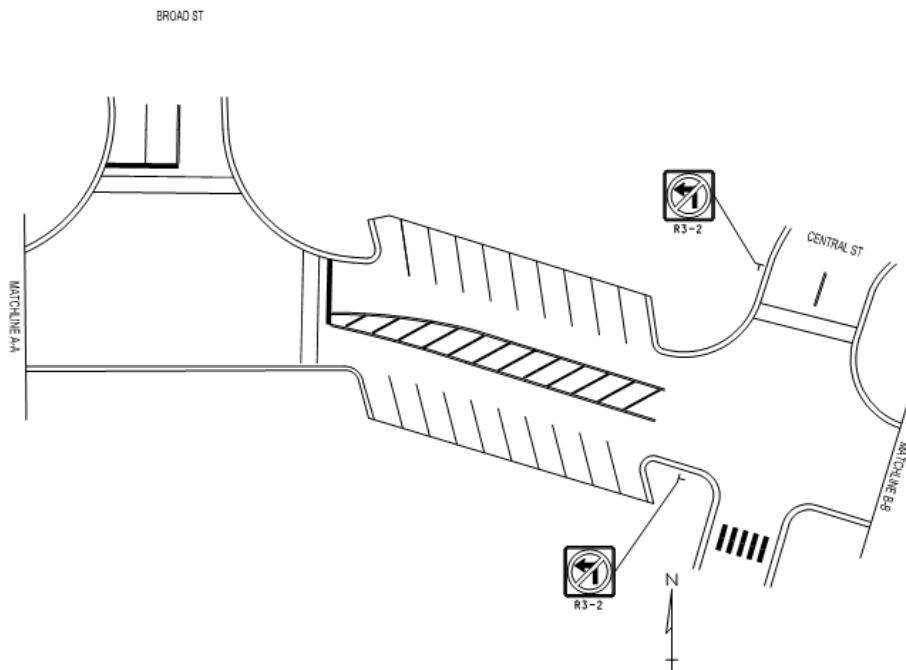
Table 3: HCM 2010 LOS - Existing Conditions

Peak Period	Intersection	LOS (Avg. Delay in sec./veh)				
		NB	SB	EB	WB	Int.
AM Peak	Main Street at Broad Street	NA	C (31.1)	D (38.7)	C (23.5)	C (33.3)
Mid-Day		NA	B (19.2)	A (9.0)	D (36.7)	C (22.1)
PM Peak		NA	C (29.5)	B (15.1)	F (101.9)	E (61.2)
AM Peak	Main Street at Central Street	E (40.6)	F (180.9)	A (8.6)	B (10.2)	B (18.2)
Mid-Day		D (27.0)	D (34.7)	A (1.3)	A (0.2)	A (4.4)
PM Peak		D (28.1)	F (102.1)	A (1.6)	A (0.1)	A (7.8)
AM Peak	Main Street at Baker Road	D (49.9)	NA	A (8.0)	E (58.2)	C (27.9)
Mid-Day		C (26.7)	NA	B (13.1)	A (9.8)	B (16.5)
PM Peak		C (21.8)	NA	B (11.9)	C (23.9)	B (19.1)

PROPOSED OPERATIONS ANALYSIS

Three alternatives were evaluated at this intersection and the results are provided in Appendix B.

- Alternative One – Optimizes the signals using existing signal equipment.
- Alternative Two – In addition to optimization, this alternative adds right-turn overlaps to the SB approach on Broad Street, the NB approach on Baker Road, and the EB approach on Main St at Baker Road.
- Alternative Three – This alternative builds on Alternative Two by eliminating left-turns in the EB and SB directions at the intersection of Main Street and Central Street, as shown in Figure 2 below:

**Figure 2: Alternative Three Concept**

In addition to these three alternatives, a RODEL analysis was performed to investigate the feasibility of converting the signalized intersections to mini-roundabouts. All proposed alternatives involve optimizing the signal timing at the intersections while updating clearance intervals for yellow and all-red time according to MDOT standards. The spreadsheet which adjusts yellow and all-red time to current MDOT standards is provided in Appendix C. The tables below (4a and 4b) summarize the existing and proposed, optimized cycle lengths, offsets, and phase splits at each signalized intersection, according to model.

Table 4a: Signal Timing Summaries

Intersection	Model	Period	Cycle Length, sec.	Offset, sec.	Phase Splits, sec.		
					EB/WB Main Phase, sec.	SB Broad Phase, sec.	EB Main LT Phase, sec.
Main at Broad	Existing	AM	80	10	50	20	10
		OP	60	9	30	20	10
		PM	90	0	65	15	10
	Alternative 1 - Signal Optimization Only	AM	80	60	50	17	13
		OP	70	52	41	16	13
		PM	120	18	91	16	13
	Alternative 2 – RT Overlaps	AM	90	63	55	22	13
		OP	80	55	51	16	13
		PM	120	20	91	16	13
	Alternative 3 - No LTs at Central	AM	90	63	51	26	13
		OP	70	48	41	16	13
		PM	120	20	91	16	13

Table 4b: Signal Timing Summaries

Intersection	Model	Period	Cycle Length, sec.	Offset, sec.	Phase Splits, sec.		
					EB/WB Main Phase, sec.	NB Baker Phase, sec.	WB Main LT Phase, sec.
Main at Baker	Existing	AM	80	0	46	22	12
		OP	60	0	23	23	14
		PM	60	0	25	24	11
	Alternative 1 - Signal Optimization Only	AM	80	0	39	29	12
		OP	70	0	29	29	12
		PM	120	0	54	54	12
	Alternative 2 – RT Overlaps	AM	90	0	39	39	12
		OP	80	0	34	34	12
		PM	120	0	54	54	12
	Alternative 3 - No LTs at Central	AM	90	0	39	39	12
		OP	70	0	29	29	12
		PM	120	0	54	54	12

At the request of the City, we also investigated the impacts of installing a split-phased traffic signal at the viaduct approximately 750' west of the Broad Street intersection. This signal would meter traffic to allow one direction to travel under the viaduct at a time, while holding the opposite direction back with a red signal indication.

PROPOSED OPERATIONS DISCUSSION

As seen in Tables 5a-5c, each alternative has minimal effect in reducing overall intersection delay at each of the study intersections. Generally, as intended, each alternative improves incrementally upon the alternative before it, which results in Alternative Three displaying the most positive results, particularly at the intersection of Main Street and Central Street due to the elimination of left-turns at the intersection. This alternative, if implemented, may prove to show even greater reduction in delays than predicted due to the observed tendency for left-turns to impede consistent traffic flow at the intersection.

During the signal optimization process, we determined that a 120 second cycle at both intersections best serves westbound traffic progression in the PM peak, regardless of alternative. Holding the cycle lengths equal at both intersections coordinates the signals and invokes the ability to utilize an offset that best serves westbound throughput. Providing the minimal amount of time feasible to the southbound Broad Road and eastbound Main Street left-turn phases also aids in moving vehicles through the intersection, and out of town to the west. These determinations are reflected in the recommended signal timing parameters presented in Tables 4a and 4b.

As suggested in Alternative Two, replacing or upgrading the existing signal equipment to allow for right-turn overlaps for any applicable phase is also shown to reduce approach delay, most notably in the southbound direction on Broad Street in the AM peak period and in the eastbound direction on Baker Road in the PM peak period. Providing a right-turn overlap green arrow may be accomplished with a “doghouse” style signal facing the right-turn lane to include the yellow and green right turn arrows. A figure from the 2011 Michigan Manual on Uniform Traffic Control Devices (MMUTCD) depicting the typical position and arrangement of a doghouse signal for right-turn overlaps is shown in Figure 3.

Figure 4D-18. Typical Positions and Arrangements of Shared Signal Faces for Protected/Permissive Mode Right Turns

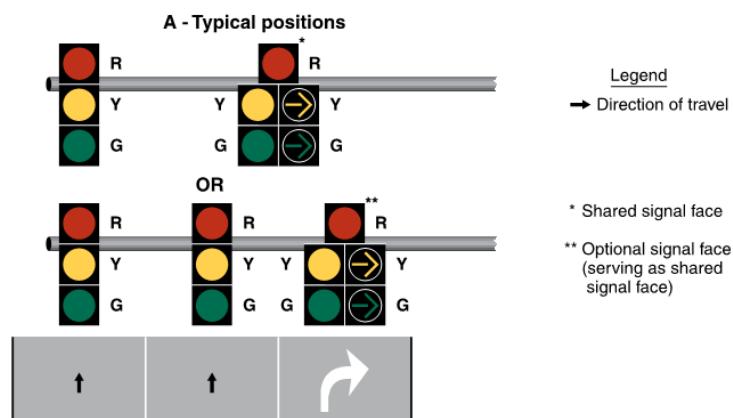


Figure 3: Doghouse Signals for Right-Turns

Figure 4D-11. Typical Position and Arrangements of Shared Signal Faces for Protected/Permissive Mode Left Turns

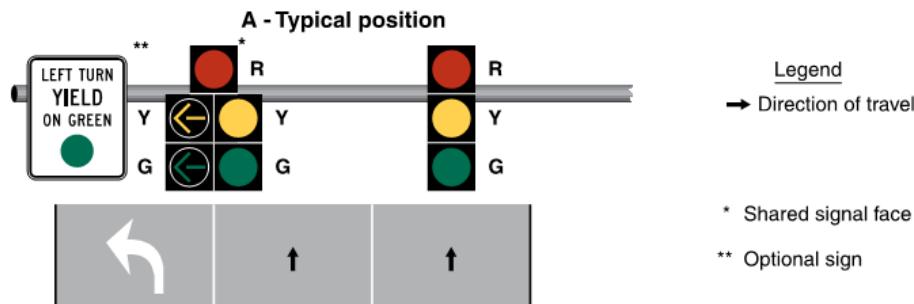


Figure 4: Doghouse Signals for Left-Turns

Each alternative under analysis proposes converting the left-turn phases on Main Street at both signalized intersections from “Protected Only” to “Protected-Permissive” to allow any left-turning vehicles that arrive after the protected green-arrow display an opportunity to turn left dependent on a reasonable gap in through traffic. A figure from the 2011 MMUTCD depicting the typical position and arrangement of a doghouse signal for “Protected-Permissive” left-turns is shown in Figure 4. This change would have a particularly positive impact in the WB direction at Main Street and Baker Road during the AM peak period due to a fairly heavy volume of left-turning vehicles (123 observed). Additionally, should Alternative Three be pursued (eliminating left turns at Central), eastbound Main Street left-turns at Broad Street can be expected to increase by up to 90 vehicles in the PM peak period, resulting in an approximate total of 150 vehicles. This magnitude of left-turn movements would typically benefit from “Protected-Permissive” signal phasing.

Table 5a: HCM 2010 Level of Service – Main Street and Broad Street

		LOS (Avg. Delay in sec./veh)			
		SB	EB	WB	Int.
2017 AM Peak	Existing Conditions	C (31.1)	D (38.7)	C (23.5)	C (33.3)
	Alternative 1 – Signal Optimization Only	D (49.1)	D (38.2)	B (12.2)	C (34.2)
	Alternative 2 – RT Overlaps	C (33.3)	D (42.6)	B (13.6)	C (33.5)
	Alternative 3 – No LTs at Central	D (39.2)	E (60.2)	B (16.1)	D (45.4)
2017 Mid- Day	Existing Conditions	B (19.2)	A (9.0)	D (36.7)	C (22.1)
	Alternative 1 – Signal Optimization Only	C (26.2)	A (7.3)	B (19.6)	B (15.0)
	Alternative 2 – RT Overlaps	C (29.1)	A (6.4)	B (13.9)	B (12.5)
	Alternative 3 – No LTs at Central	C (33.8)	A (7.6)	B (18.9)	B (15.8)
2017 PM Peak	Existing Conditions	C (29.5)	B (15.1)	F (101.9)	E (61.2)
	Alternative 1 – Signal Optimization Only	D (47.9)	A (6.6)	F (78.4)	D (48.6)
	Alternative 2 – RT Overlaps	D (49.4)	A (6.6)	E (76.4)	D (47.7)
	Alternative 3 – No LTs at Central	E (70.8)	B (11.3)	E (77.7)	D (51.1)

Table 5b: HCM 2010 Level of Service – Main Street at Central Street

		LOS (Avg. Delay in sec./veh)				
		NB	SB	EB	WB	Int.
2017 AM Peak	Existing Conditions	E (40.6)	F (180.9)	A (8.6)	B (10.2)	B (18.2)
	Alternative 3 – No LTs at Central	D (32.1)	B (12.8)	A (0.0)	A (0.3)	A (1.4)
2017 Mid-Day	Existing Conditions	D (27.0)	D (34.7)	A (1.3)	A (0.2)	A (4.4)
	Alternative 3 – No LTs at Central	C (20.9)	B (13.2)	A (0.0)	A (0.2)	A (1.6)
2017 PM Peak	Existing Conditions	D (28.1)	F (102.1)	A (1.6)	A (0.1)	A (7.8)
	Alternative 3 – No LTs at Central	C (21.9)	C (19.7)	A (0.0)	A (0.1)	A (1.8)

Table 5c: HCM 2010 Level of Service – Main Street and Baker Road

		LOS (Avg. Delay in sec./veh)			
		NB	EB	WB	Int.
2017 AM Peak	Existing Conditions	D (49.9)	A (8.0)	E (58.2)	C (27.9)
	Alternative 1 – Signal Optimization Only	C (33.0)	A (7.3)	A (8.9)	B (13.7)
	Alternative 2 – RT Overlaps	C (31.0)	A (7.1)	B (10.4)	B (13.4)
	Alternative 3 – No LTs at Central	C (31.0)	A (6.7)	B (10.4)	B (13.2)
2017 Mid-Day	Existing Conditions	C (26.7)	B (13.1)	A (9.8)	B (16.5)
	Alternative 1 – Signal Optimization Only	C (28.7)	A (8.8)	A (9.3)	B (15.1)
	Alternative 2 – RT Overlaps	C (31.3)	A (7.6)	A (9.5)	B (15.4)
	Alternative 3 – No LTs at Central	C (27.9)	A (7.8)	A (9.4)	B (14.4)
2017 PM Peak	Existing Conditions	C (21.8)	B (11.9)	C (23.9)	B (19.1)
	Alternative 1 – Signal Optimization Only	D (35.5)	B (15.7)	C (21.1)	C (24.5)
	Alternative 2 – RT Overlaps	C (35.0)	A (9.5)	C (21.0)	C (22.1)
	Alternative 3 – No LTs at Central	C (34.9)	A (9.1)	C (21.0)	C (22.0)

As mentioned previously, a RODEL analysis was conducted to determine the feasibility of converting the signalized intersections at Main Street and Broad Street and Main Street at Baker Road to mini-roundabouts. It was determined that both intersections would operate at LOS F due to the inability of a single lane roundabout to provide the necessary capacity required for the observed through movement traffic volumes. Considering that a multi-lane roundabout would not fit within the existing right-of-way (ROW) and nationally there has been severe apprehension about the use of multi-lane roundabouts in areas with heavy pedestrian traffic, we do not recommend that the City pursue roundabout conversion at either intersection.

An operational review of the proposed split-phased traffic signal at the viaduct west of Broad showed that the volume to capacity ratio exceeds 1.25 which would lead to extensive traffic backups. Synchro indicated delays would extend beyond two minutes in each direction, which would then spill back into the already congested downtown traffic. Thus, this option was not considered viable and not included in the models.

RECOMMENDATIONS AND FINDINGS

We provide the following recommendations, based on our evaluation of the existing operational characteristics and the proposed alternatives:

- As an initial measure, optimize the signal timing splits based on the Synchro analysis provided in this study and provided in Tables 4a and 4b. Additionally, convert “Protected-Only” left-turn movements to “Protected-Permissive” left-turn movements by way of implementing 4-section left turn or doghouse-style signal heads. To improve safety at the intersection, the yellow, all-red and pedestrian clearance intervals should be updated to follow the latest MDOT guidelines.
- To further improve intersection LOS, implement right-turn overlaps as proposed and evaluated under Alternative Two. Right-turn overlaps will reduce right-turn movement delays, particularly southbound on Broad Street in the AM peak period and eastbound on Baker Road in the PM peak period.
- Consider prohibiting eastbound and southbound left turns at Central Street to reduce the amount of vehicles stopping on Main Street to allow vehicles to turn left into or out of Central Street.
- We recommend installing a doghouse signal for all dedicated turn lanes. In lieu of a doghouse at Main Street and Baker Road, another option is to install a “NO RIGHT TURN” disappearing legend case sign to convey to motorists that the EB right turn movement conflicts with the protected portion of the WB left-turn phase.
- Coordination between the two study signalized intersections is critical. However, we do not recommend any coordination efforts between the study intersections and the nearest signalized intersections of Dexter-Pinckney Road at Island Lake Road, Ann Arbor Street at Meadowview Drive, and Baker Road at Dan Hoey Road, due to distances from the study intersections exceeding 2,500 feet.
- OHM investigated the effect of converting the protected left turn movements from “leading” to “lagging” for eastbound Main Street at Broad Street and westbound Main Street at Baker Road, and determined that this change would have negligible, if not inconsistent, impact on average vehicle delay at the intersections. Given that motorists currently expect the leading left-turns, we would recommend preserving the current signal phase order at both intersections.

With these recommended operational changes, we believe that there will be minor improvements in traffic operations. However, this corridor will continue to remain problematic, given the heavy traffic flows seeking to pass through the heart of the City each peak commute period. To more effectively relieve the traffic pressure on the downtown, vehicles traveling through would need to be presented with a viable bypass route around the City.

APPENDIX A

TRAFFIC DATA

OHM Advisors

34000 Plymouth Road
Livonia, MI 48150

Advancing Communities

Weather: Sunny

SN: T12-960

County By: Peter Bruchnak

Other Notes: None

File Name : TMC - Main at Baker - 20170601 - Raw

Site Code : 22222222

Start Date : 6/1/2017

Page No : 1

Groups Printed- Light Vehicles - Heavy Vehicles

Start Time	Baker Rd Southbound					Ann Arbor St Westbound					Baker Rd Northbound					Main St Eastbound					Int. Total
	Right	Thru	Left	Peds	App. Total	Right	Thru	Left	Peds	App. Total	Right	Thru	Left	Peds	App. Total	Right	Thru	Left	Peds	App. Total	
07:00 AM	0	0	0	0	0	0	14	8	0	22	10	0	31	1	42	159	105	0	0	264	328
07:15 AM	0	0	0	0	0	0	21	22	0	43	4	0	29	1	34	171	99	0	1	271	348
07:30 AM	0	0	0	2	2	0	21	36	0	57	11	0	45	0	56	147	98	0	3	248	363
07:45 AM	0	0	0	0	0	0	46	44	0	90	18	0	59	0	77	144	109	0	1	254	421
Total	0	0	0	2	2	0	102	110	0	212	43	0	164	2	209	621	411	0	5	1037	1460
08:00 AM	0	0	0	0	0	0	51	23	0	74	28	4	77	1	110	143	99	0	4	246	430
08:15 AM	0	0	0	0	0	0	33	20	0	53	14	1	50	1	66	137	100	0	9	246	365
08:30 AM	0	0	0	0	0	0	38	14	0	52	8	0	46	0	54	113	70	0	2	185	291
08:45 AM	0	0	0	0	0	0	39	15	0	54	3	0	43	0	46	114	70	1	1	186	286
Total	0	0	0	0	0	0	161	72	0	233	53	5	216	2	276	507	339	1	16	863	1372

*** BREAK ***

11:00 AM	0	0	0	1	1	0	53	4	0	57	12	0	70	0	82	67	46	0	1	114	254
11:15 AM	0	0	0	0	0	0	54	7	0	61	10	0	63	0	73	75	59	0	1	135	269
11:30 AM	0	0	0	2	2	0	60	11	0	71	19	0	74	1	94	62	57	0	0	119	286
11:45 AM	0	0	0	0	0	0	62	9	0	71	18	0	73	2	93	53	61	0	2	116	280
Total	0	0	0	3	3	0	229	31	0	260	59	0	280	3	342	257	223	0	4	484	1089
12:00 PM	0	0	0	0	0	0	57	6	0	63	12	0	84	0	96	58	42	0	0	100	259
12:15 PM	0	0	0	2	2	0	61	9	0	70	13	0	78	0	91	56	52	0	3	111	274
12:30 PM	0	0	0	0	0	0	68	9	0	77	16	0	69	0	85	85	56	0	1	142	304
12:45 PM	0	0	0	0	0	0	52	4	0	56	17	0	80	0	97	75	52	0	1	128	281
Total	0	0	0	2	2	0	238	28	0	266	58	0	311	0	369	274	202	0	5	481	1118

*** BREAK ***

04:00 PM	0	0	0	0	0	0	112	10	0	122	25	0	89	0	114	65	63	0	4	132	368
04:15 PM	0	0	0	0	0	0	113	20	0	133	41	0	103	0	144	78	49	0	1	128	405
04:30 PM	0	0	0	1	1	0	97	11	0	108	65	2	107	0	174	51	51	0	2	104	387
04:45 PM	0	0	0	1	1	0	116	11	0	127	71	0	91	0	162	62	64	0	3	129	419
Total	0	0	0	2	2	0	438	52	0	490	202	2	390	0	594	256	227	0	10	493	1579
05:00 PM	0	0	0	0	0	0	117	13	0	130	63	2	99	0	164	67	56	0	8	131	425
05:15 PM	0	0	0	0	0	0	116	13	0	129	43	0	89	0	132	55	77	0	0	132	393
05:30 PM	0	0	0	0	0	0	110	16	0	126	50	0	100	1	151	69	84	0	6	159	436
05:45 PM	0	0	0	0	0	0	111	9	0	120	60	0	76	0	136	54	73	0	1	128	384
Total	0	0	0	0	0	0	454	51	0	505	216	2	364	1	583	245	290	0	15	550	1638

OHM Advisors

34000 Plymouth Road
Livonia, MI 48150

Advancing Communities

Weather: Sunny

SN: T12-960

County By: Peter Bruchnak

Other Notes: None

File Name : TMC - Main at Baker - 20170601 - Raw

Site Code : 22222222

Start Date : 6/1/2017

Page No : 2

Groups Printed- Light Vehicles - Heavy Vehicles

	Baker Rd Southbound					Ann Arbor St Westbound					Baker Rd Northbound					Main St Eastbound					
	Right	Thru	Left	Peds	App. Total	Right	Thru	Left	Peds	App. Total	Right	Thru	Left	Peds	App. Total	Right	Thru	Left	Peds	App. Total	Int. Total
Grand Total	0	0	0	9	9	0	1622	344	0	1966	631	9	1725	8	2373	2160	1692	1	55	3908	8256
Apprch %	0	0	0	100		0	82.5	17.5	0		26.6	0.4	72.7	0.3		55.3	43.3	0	1.4		
Total %	0	0	0	0.1	0.1	0	19.6	4.2	0	23.8	7.6	0.1	20.9	0.1	28.7	26.2	20.5	0	0.7	47.3	
Light Vehicles	0	0	0	9	9	0	1594	334	0	1928	621	9	1669	8	2307	2081	1656	1	54	3792	8036
% Light Vehicles	0	0	0	100	100	0	98.3	97.1	0	98.1	98.4	100	96.8	100	97.2	96.3	97.9	100	98.2	97	97.3
Heavy Vehicles	0	0	0	0	0	0	28	10	0	38	10	0	56	0	66	79	36	0	1	116	220
% Heavy Vehicles	0	0	0	0	0	0	1.7	2.9	0	1.9	1.6	0	3.2	0	2.8	3.7	2.1	0	1.8	3	2.7

OHM Advisors

34000 Plymouth Road
Livonia, MI 48150

Advancing Communities

Weather: Sunny

SN: T12-960

County By: Peter Bruchnak

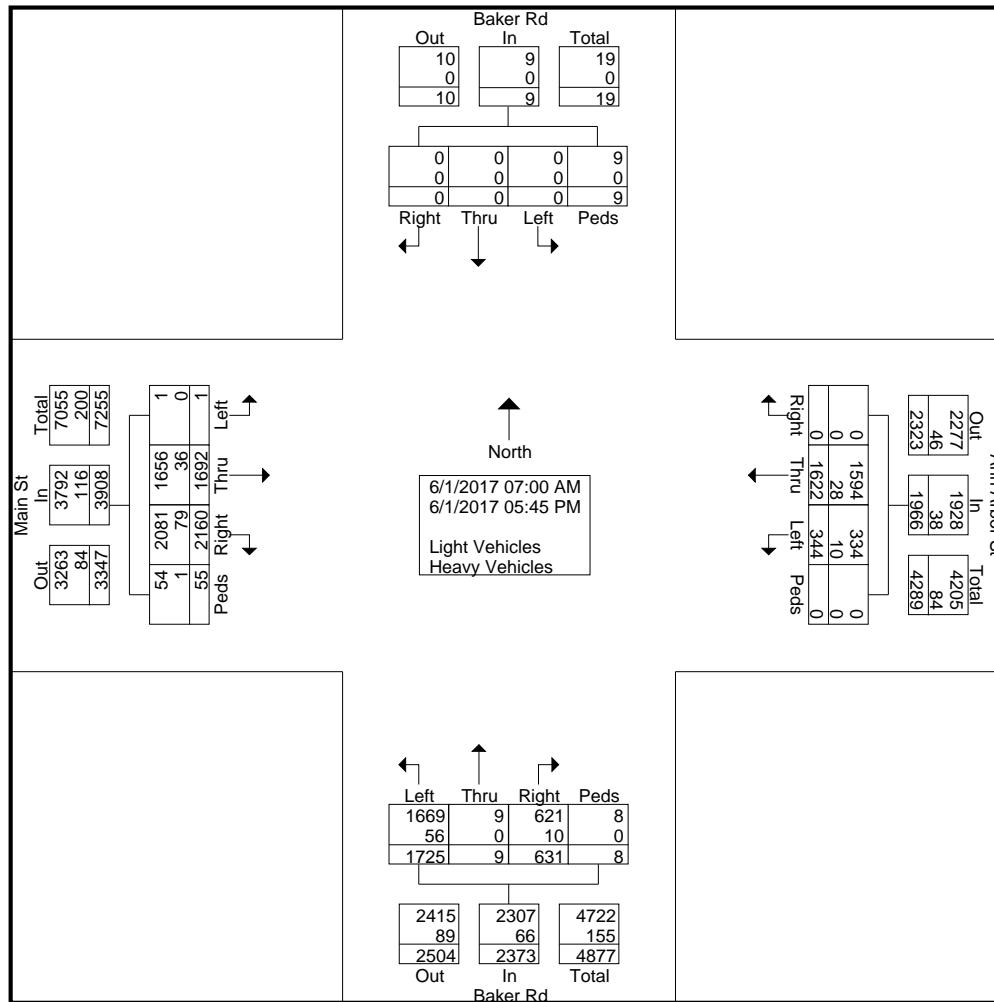
Other Notes: None

File Name : TMC - Main at Baker - 20170601 - Raw

Site Code : 22222222

Start Date : 6/1/2017

Page No : 3



OHM Advisors

34000 Plymouth Road

Livonia, MI 48150

Advancing Communities

Weather: Sunny

SN: T12-960

County By: Peter Bruchnak

Other Notes: None

File Name : TMC - Main at Baker - 20170601 - Raw

Site Code : 22222222

Start Date : 6/1/2017

Page No : 4

	Baker Rd Southbound					Ann Arbor St Westbound					Baker Rd Northbound					Main St Eastbound					
Start Time	Right	Thru	Left	Peds	App. Total	Right	Thru	Left	Peds	App. Total	Right	Thru	Left	Peds	App. Total	Right	Thru	Left	Peds	App. Total	Int. Total
Peak Hour Analysis From 07:00 AM to 08:45 AM - Peak 1 of 1																					
Peak Hour for Entire Intersection Begins at 07:30 AM																					
07:30 AM	0	0	0	2	2	0	21	36	0	57	11	0	45	0	56	147	98	0	3	248	363
07:45 AM	0	0	0	0	0	0	46	44	0	90	18	0	59	0	77	144	109	0	1	254	421
08:00 AM	0	0	0	0	0	0	51	23	0	74	28	4	77	1	110	143	99	0	4	246	430
08:15 AM	0	0	0	0	0	0	33	20	0	53	14	1	50	1	66	137	100	0	9	246	365
Total Volume	0	0	0	2	2	0	151	123	0	274	71	5	231	2	309	571	406	0	17	994	1579
% App. Total	0	0	0	100		0	55.1	44.9	0		23	1.6	74.8	0.6		57.4	40.8	0	1.7		
PHF	.000	.000	.000	.250	.250	.000	.740	.699	.000	.761	.634	.313	.750	.500	.702	.971	.931	.000	.472	.978	.918
Light Vehicles	0	0	0	2	2	0	143	118	0	261	68	5	221	2	296	556	400	0	17	973	1532
% Light Vehicles	0	0	0	100	100	0	94.7	95.9	0	95.3	95.8	100	95.7	100	95.8	97.4	98.5	0	100	97.9	97.0
Heavy Vehicles	0	0	0	0	0	0	8	5	0	13	3	0	10	0	13	15	6	0	0	21	47
% Heavy Vehicles	0	0	0	0	0	0	5.3	4.1	0	4.7	4.2	0	4.3	0	4.2	2.6	1.5	0	0	2.1	3.0

OHM Advisors

34000 Plymouth Road

Livonia, MI 48150

Advancing Communities

Weather: Sunny

SN: T12-960

County By: Peter Bruchnak

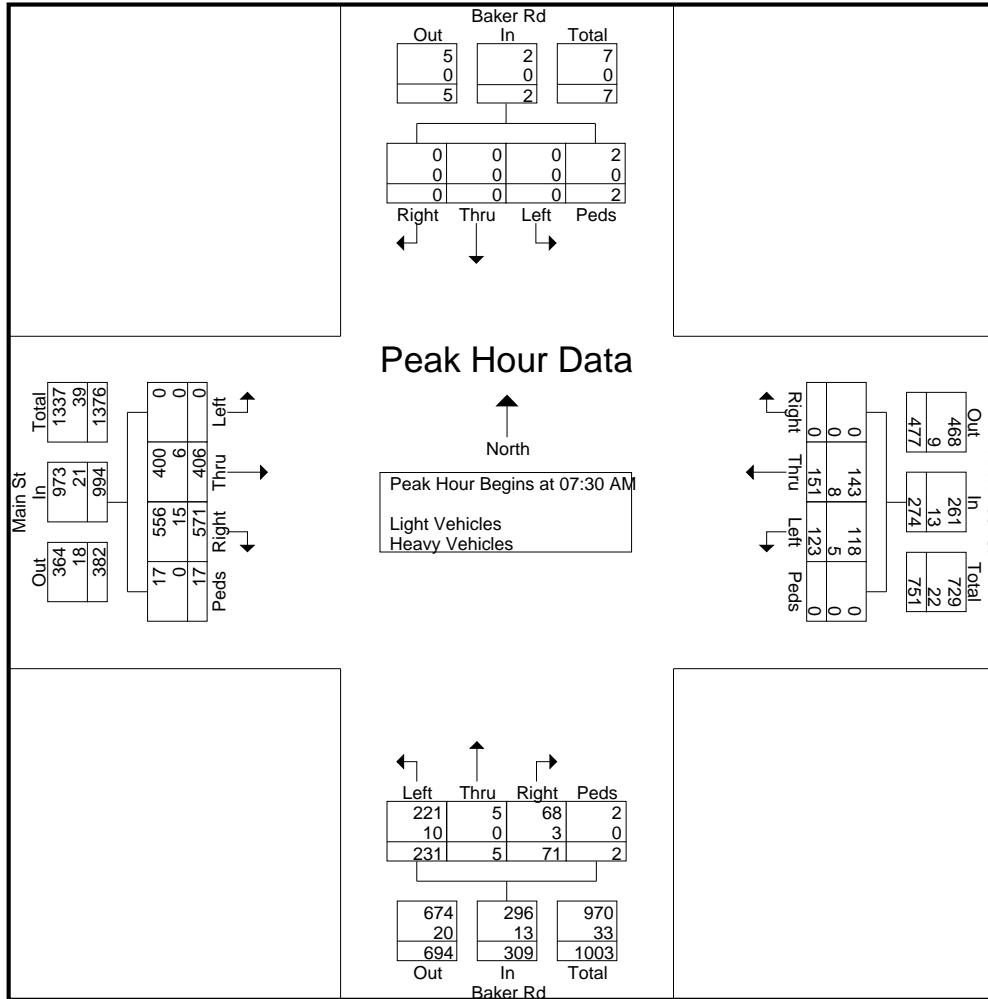
Other Notes: None

File Name : TMC - Main at Baker - 20170601 - Raw

Site Code : 22222222

Start Date : 6/1/2017

Page No : 5



OHM Advisors

34000 Plymouth Road

Livonia, MI 48150

Advancing Communities

Weather: Sunny

SN: T12-960

County By: Peter Bruchnak

Other Notes: None

File Name : TMC - Main at Baker - 20170601 - Raw

Site Code : 22222222

Start Date : 6/1/2017

Page No : 6

Start Time	Baker Rd Southbound					Ann Arbor St Westbound					Baker Rd Northbound					Main St Eastbound					
	Right	Thru	Left	Peds	App. Total	Right	Thru	Left	Peds	App. Total	Right	Thru	Left	Peds	App. Total	Right	Thru	Left	Peds	App. Total	Int. Total
Peak Hour Analysis From 11:00 AM to 12:45 PM - Peak 1 of 1																					
Peak Hour for Entire Intersection Begins at 12:00 PM																					
12:00 PM	0	0	0	0	0	0	57	6	0	63	12	0	84	0	96	58	42	0	0	100	259
12:15 PM	0	0	0	2	2	0	61	9	0	70	13	0	78	0	91	56	52	0	3	111	274
12:30 PM	0	0	0	0	0	0	68	9	0	77	16	0	69	0	85	85	56	0	1	142	304
12:45 PM	0	0	0	0	0	0	52	4	0	56	17	0	80	0	97	75	52	0	1	128	281
Total Volume	0	0	0	2	2	0	238	28	0	266	58	0	311	0	369	274	202	0	5	481	1118
% App. Total	0	0	0	100		0	89.5	10.5	0		15.7	0	84.3	0		57	42	0	1		
PHF	.000	.000	.000	.250	.250	.000	.875	.778	.000	.864	.853	.000	.926	.000	.951	.806	.902	.000	.417	.847	.919
Light Vehicles	0	0	0	2	2	0	231	27	0	258	57	0	301	0	358	262	197	0	5	464	1082
% Light Vehicles	0	0	0	100	100	0	97.1	96.4	0	97.0	98.3	0	96.8	0	97.0	95.6	97.5	0	100	96.5	96.8
Heavy Vehicles	0	0	0	0	0	0	7	1	0	8	1	0	10	0	11	12	5	0	0	17	36
% Heavy Vehicles	0	0	0	0	0	0	2.9	3.6	0	3.0	1.7	0	3.2	0	3.0	4.4	2.5	0	0	3.5	3.2

OHM Advisors

34000 Plymouth Road
Livonia, MI 48150

Advancing Communities

Weather: Sunny

SN: T12-960

County By: Peter Bruchnak

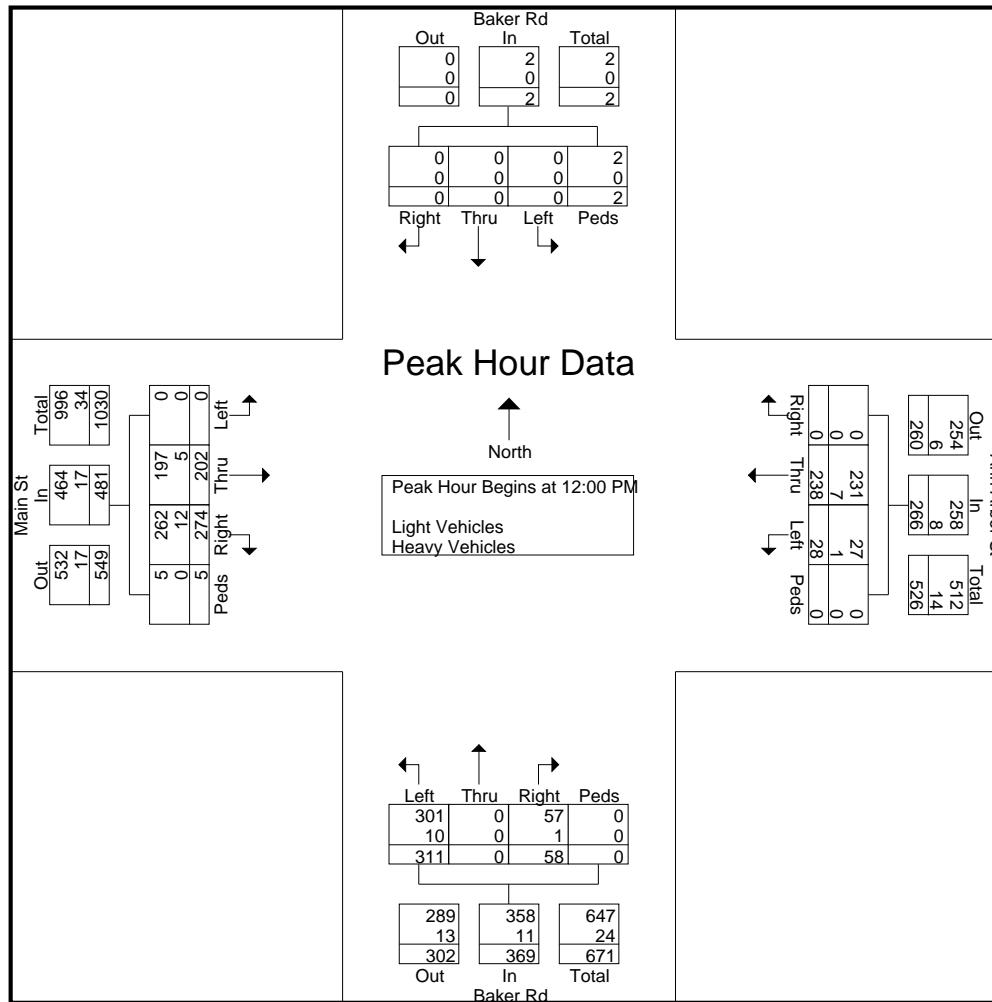
Other Notes: None

File Name : TMC - Main at Baker - 20170601 - Raw

Site Code : 22222222

Start Date : 6/1/2017

Page No : 7



OHM Advisors

34000 Plymouth Road

Livonia, MI 48150

Advancing Communities

Weather: Sunny

SN: T12-960

County By: Peter Bruchnak

Other Notes: None

File Name : TMC - Main at Baker - 20170601 - Raw

Site Code : 22222222

Start Date : 6/1/2017

Page No : 8

Start Time	Baker Rd Southbound					Ann Arbor St Westbound					Baker Rd Northbound					Main St Eastbound					
	Right	Thru	Left	Peds	App. Total	Right	Thru	Left	Peds	App. Total	Right	Thru	Left	Peds	App. Total	Right	Thru	Left	Peds	App. Total	Int. Total
Peak Hour Analysis From 04:00 PM to 05:45 PM - Peak 1 of 1																					
Peak Hour for Entire Intersection Begins at 04:45 PM																					
04:45 PM	0	0	0	1	1	0	116	11	0	127	71	0	91	0	162	62	64	0	3	129	419
05:00 PM	0	0	0	0	0	0	117	13	0	130	63	2	99	0	164	67	56	0	8	131	425
05:15 PM	0	0	0	0	0	0	116	13	0	129	43	0	89	0	132	55	77	0	0	132	393
05:30 PM	0	0	0	0	0	0	110	16	0	126	50	0	100	1	151	69	84	0	6	159	436
Total Volume	0	0	0	1	1	0	459	53	0	512	227	2	379	1	609	253	281	0	17	551	1673
% App. Total	0	0	0	100	100	0	89.6	10.4	0	37.3	0.3	62.2	0.2	45.9	51	0	3.1				
PHF	.000	.000	.000	.250	.250	.000	.981	.828	.000	.985	.799	.250	.948	.250	.928	.917	.836	.000	.531	.866	.959
Light Vehicles	0	0	0	1	1	0	454	52	0	506	226	2	377	1	606	248	281	0	17	546	1659
% Light Vehicles	0	0	0	100	100	0	98.9	98.1	0	98.8	99.6	100	99.5	100	99.5	98.0	100	0	100	99.1	99.2
Heavy Vehicles	0	0	0	0	0	0	5	1	0	6	1	0	2	0	3	5	0	0	0	5	14
% Heavy Vehicles	0	0	0	0	0	0	1.1	1.9	0	1.2	0.4	0	0.5	0	0.5	2.0	0	0	0	0.9	0.8

OHM Advisors

34000 Plymouth Road

Livonia, MI 48150

Advancing Communities

Weather: Sunny

SN: T12-960

County By: Peter Bruchnak

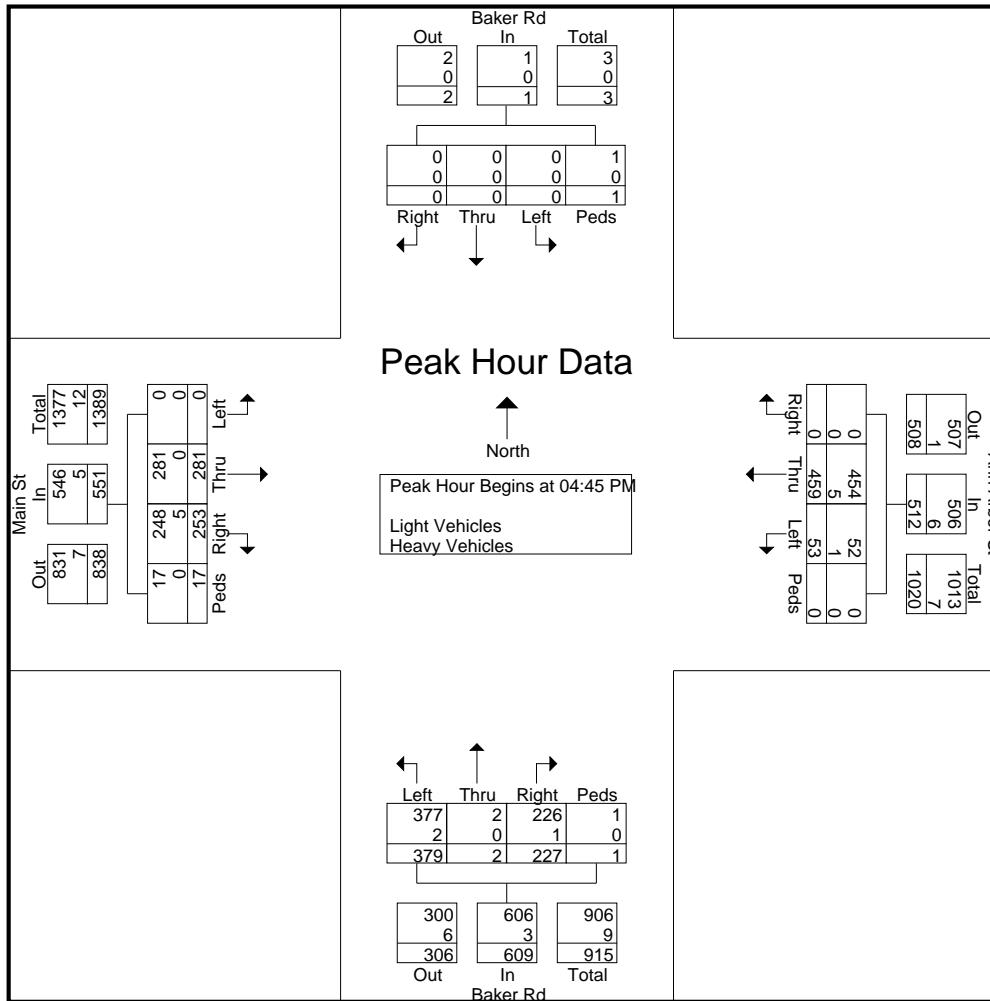
Other Notes: None

File Name : TMC - Main at Baker - 20170601 - Raw

Site Code : 22222222

Start Date : 6/1/2017

Page No : 9



OHM Advisors

34000 Plymouth Road
Livonia, MI 48150
Advancing Communities

Weather: Sunny

SN: T-2737

County By: Julia Villaneuva

Other Notes: None

File Name : TMC - Main at Broad - 20170601 - Raw
Site Code : 11111111
Start Date : 6/1/2017
Page No : 1

Groups Printed- Light Vehicles - Heavy Vehicles

Start Time	Broad St Southbound					Main St Westbound					Broad St Northbound					Main St Eastbound					Int. Total
	Right	Thru	Left	Peds	App. Total	Right	Thru	Left	Peds	App. Total	Right	Thru	Left	Peds	App. Total	Right	Thru	Left	Peds	App. Total	
07:00 AM	19	0	17	2	38	4	38	0	5	47	0	0	0	0	0	0	243	1	0	244	329
07:15 AM	51	0	31	2	84	7	54	0	7	68	0	0	0	1	1	0	231	1	0	232	385
07:30 AM	51	0	29	2	82	3	80	0	1	84	0	0	0	1	1	0	213	4	0	217	384
07:45 AM	37	0	49	12	98	11	88	0	8	107	0	0	0	5	5	0	212	3	1	216	426
Total	158	0	126	18	302	25	260	0	21	306	0	0	0	7	7	0	899	9	1	909	1524
08:00 AM	12	0	32	0	44	22	86	0	3	111	0	0	0	4	4	0	222	7	0	229	388
08:15 AM	14	0	16	4	34	11	77	0	0	88	0	0	0	2	2	0	217	7	0	224	348
08:30 AM	12	1	16	0	29	9	76	0	1	86	0	0	0	8	8	0	175	5	0	180	303
08:45 AM	22	0	14	4	40	12	73	0	4	89	0	0	0	7	7	0	183	5	2	190	326
Total	60	1	78	8	147	54	312	0	8	374	0	0	0	21	21	0	797	24	2	823	1365

*** BREAK ***

11:00 AM	17	0	8	6	31	9	95	0	7	111	0	0	0	6	6	0	101	5	0	106	254
11:15 AM	20	0	9	7	36	13	96	0	5	114	0	0	0	13	13	0	124	8	0	132	295
11:30 AM	21	0	12	5	38	8	127	0	5	140	0	0	0	4	4	0	118	5	0	123	305
11:45 AM	12	0	11	6	29	9	122	0	2	133	0	0	0	2	2	0	110	3	1	114	278
Total	70	0	40	24	134	39	440	0	19	498	0	0	0	25	25	0	453	21	1	475	1132
12:00 PM	18	0	15	9	42	14	119	0	3	136	0	0	0	11	11	0	98	5	0	103	292
12:15 PM	12	0	18	10	40	10	128	0	8	146	0	0	0	6	6	0	113	12	0	125	317
12:30 PM	19	0	23	15	57	8	133	0	14	155	0	0	0	2	2	0	141	12	0	153	367
12:45 PM	16	0	17	7	40	16	115	0	7	138	0	0	0	10	10	0	106	7	1	114	302
Total	65	0	73	41	179	48	495	0	32	575	0	0	0	29	29	0	458	36	1	495	1278

*** BREAK ***

04:00 PM	17	0	22	7	46	2	200	0	20	222	0	0	0	3	3	0	125	11	5	141	412
04:15 PM	36	0	21	11	68	8	221	0	11	240	0	0	0	3	3	0	118	15	0	133	444
04:30 PM	26	0	18	16	60	2	225	0	12	239	0	0	0	10	10	0	109	14	0	123	432
04:45 PM	34	0	24	14	72	7	216	0	8	231	0	0	0	15	15	0	127	18	0	145	463
Total	113	0	85	48	246	19	862	0	51	932	0	0	0	31	31	0	479	58	5	542	1751
05:00 PM	32	0	21	3	56	6	236	0	11	253	0	0	0	6	6	0	124	12	1	137	452
05:15 PM	39	0	16	5	60	6	256	0	15	277	0	0	0	6	6	0	131	9	0	140	483
05:30 PM	37	0	21	17	75	9	224	3	9	245	0	0	0	4	4	0	151	19	0	170	494
05:45 PM	31	0	14	5	50	4	214	0	24	242	0	0	0	4	4	0	158	20	7	185	481
Total	139	0	72	30	241	25	930	3	59	1017	0	0	0	20	20	0	564	60	8	632	1910

OHM Advisors

34000 Plymouth Road

Livonia, MI 48150

Advancing Communities

Weather: Sunny

SN: T-2737

County By: Julia Villaneuva

Other Notes: None

File Name : TMC - Main at Broad - 20170601 - Raw

Site Code : 11111111

Start Date : 6/1/2017

Page No : 2

Groups Printed- Light Vehicles - Heavy Vehicles

	Broad St Southbound					Main St Westbound					Broad St Northbound					Main St Eastbound					Int. Total
	Right	Thru	Left	Peds	App. Total	Right	Thru	Left	Peds	App. Total	Right	Thru	Left	Peds	App. Total	Right	Thru	Left	Peds	App. Total	
Grand Total	605	1	474	169	1249	210	3299	3	190	3702	0	0	0	133	133	0	3650	208	18	3876	8960
Apprch %	48.4	0.1	38	13.5		5.7	89.1	0.1	5.1		0	0	0	100		0	94.2	5.4	0.5		
Total %	6.8	0	5.3	1.9	13.9	2.3	36.8	0	2.1	41.3	0	0	0	1.5	1.5	0	40.7	2.3	0.2	43.3	
Light Vehicles	593	1	446	169	1209	199	3284	3	190	3676	0	0	0	133	133	0	3619	204	18	3841	8859
% Light Vehicles	98	100	94.1	100	96.8	94.8	99.5	100	100	99.3	0	0	0	100	100	0	99.2	98.1	100	99.1	98.9
Heavy Vehicles	12	0	28	0	40	11	15	0	0	26	0	0	0	0	0	0	31	4	0	35	101
% Heavy Vehicles	2	0	5.9	0	3.2	5.2	0.5	0	0	0.7	0	0	0	0	0	0	0.8	1.9	0	0.9	1.1

OHM Advisors

34000 Plymouth Road
Livonia, MI 48150

Advancing Communities

Weather: Sunny

SN: T-2737

County By: Julia Villaneuva

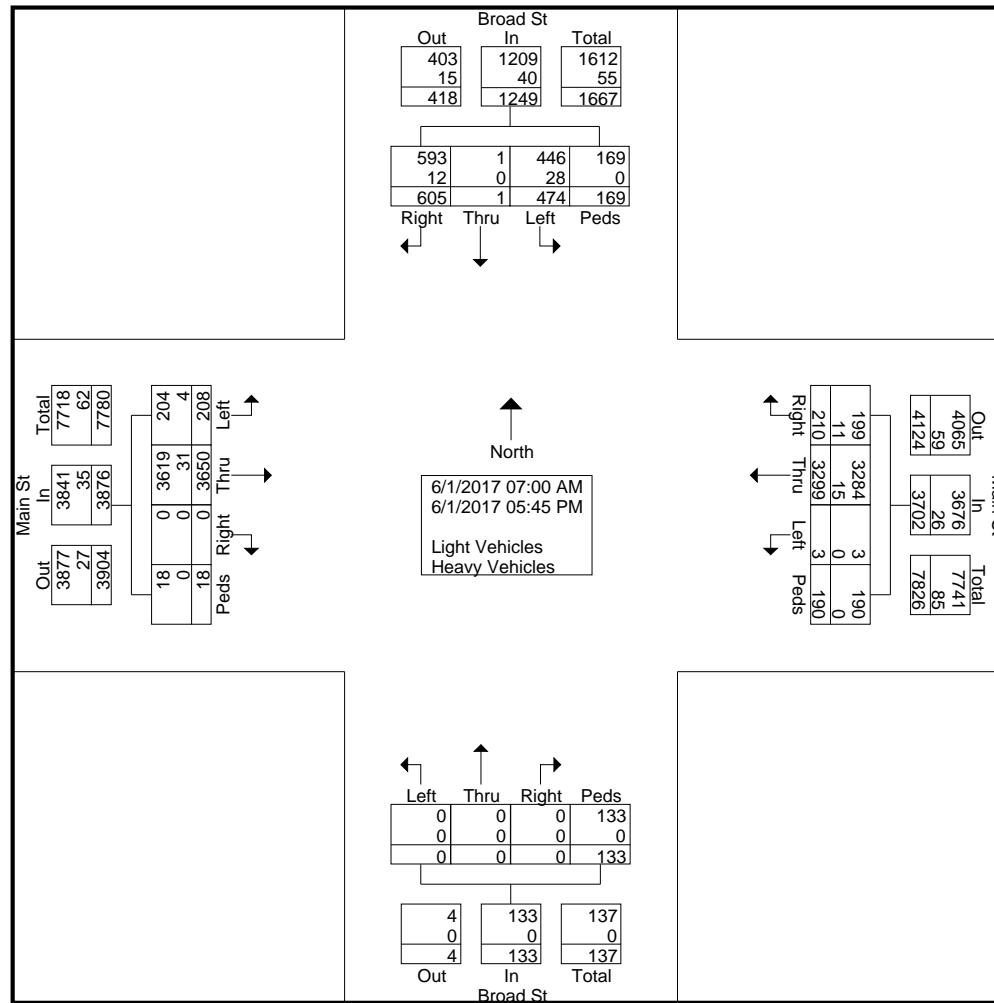
Other Notes: None

File Name : TMC - Main at Broad - 20170601 - Raw

Site Code : 11111111

Start Date : 6/1/2017

Page No : 3



OHM Advisors

34000 Plymouth Road

Livonia, MI 48150

Advancing Communities

Weather: Sunny

SN: T-2737

County By: Julia Villaneuva

Other Notes: None

File Name : TMC - Main at Broad - 20170601 - Raw

Site Code : 11111111

Start Date : 6/1/2017

Page No : 4

	Broad St Southbound					Main St Westbound					Broad St Northbound					Main St Eastbound					
Start Time	Right	Thru	Left	Peds	App. Total	Right	Thru	Left	Peds	App. Total	Right	Thru	Left	Peds	App. Total	Right	Thru	Left	Peds	App. Total	Int. Total
Peak Hour Analysis From 07:00 AM to 08:45 AM - Peak 1 of 1																					
Peak Hour for Entire Intersection Begins at 07:15 AM																					
07:15 AM	51	0	31	2	84	7	54	0	7	68	0	0	0	1	1	0	231	1	0	232	385
07:30 AM	51	0	29	2	82	3	80	0	1	84	0	0	0	1	1	0	213	4	0	217	384
07:45 AM	37	0	49	12	98	11	88	0	8	107	0	0	0	5	5	0	212	3	1	216	426
08:00 AM	12	0	32	0	44	22	86	0	3	111	0	0	0	4	4	0	222	7	0	229	388
Total Volume	151	0	141	16	308	43	308	0	19	370	0	0	0	11	11	0	878	15	1	894	1583
% App. Total	49	0	45.8	5.2		11.6	83.2	0	5.1		0	0	0	100		0	98.2	1.7	0.1		
PHF	.740	.000	.719	.333	.786	.489	.875	.000	.594	.833	.000	.000	.000	.550	.550	.000	.950	.536	.250	.963	.929
Light Vehicles	144	0	134	16	294	40	304	0	19	363	0	0	0	11	11	0	863	12	1	876	1544
% Light Vehicles	95.4	0	95.0	100	95.5	93.0	98.7	0	100	98.1	0	0	0	100	100	0	98.3	80.0	100	98.0	97.5
Heavy Vehicles	7	0	7	0	14	3	4	0	0	7	0	0	0	0	0	0	15	3	0	18	39
% Heavy Vehicles	4.6	0	5.0	0	4.5	7.0	1.3	0	0	1.9	0	0	0	0	0	0	1.7	20.0	0	2.0	2.5

OHM Advisors

34000 Plymouth Road
Livonia, MI 48150

Advancing Communities

Weather: Sunny

SN: T-2737

County By: Julia Villaneuva

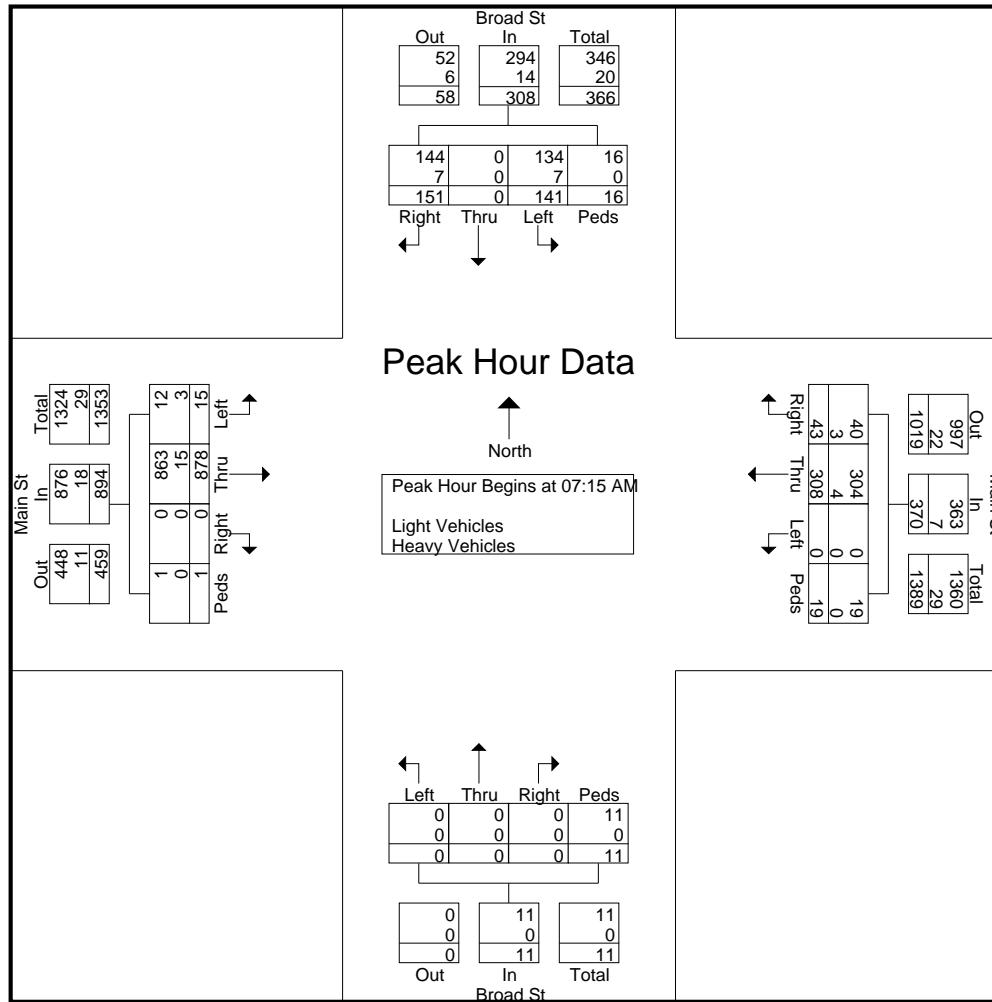
Other Notes: None

File Name : TMC - Main at Broad - 20170601 - Raw

Site Code : 11111111

Start Date : 6/1/2017

Page No : 5



OHM Advisors

34000 Plymouth Road
Livonia, MI 48150

Advancing Communities

Weather: Sunny

SN: T-2737

County By: Julia Villaneuva

Other Notes: None

File Name : TMC - Main at Broad - 20170601 - Raw

Site Code : 11111111

Start Date : 6/1/2017

Page No : 6

OHM Advisors

34000 Plymouth Road

Livonia, MI 48150

Advancing Communities

Weather: Sunny

SN: T-2737

County By: Julia Villaneuva

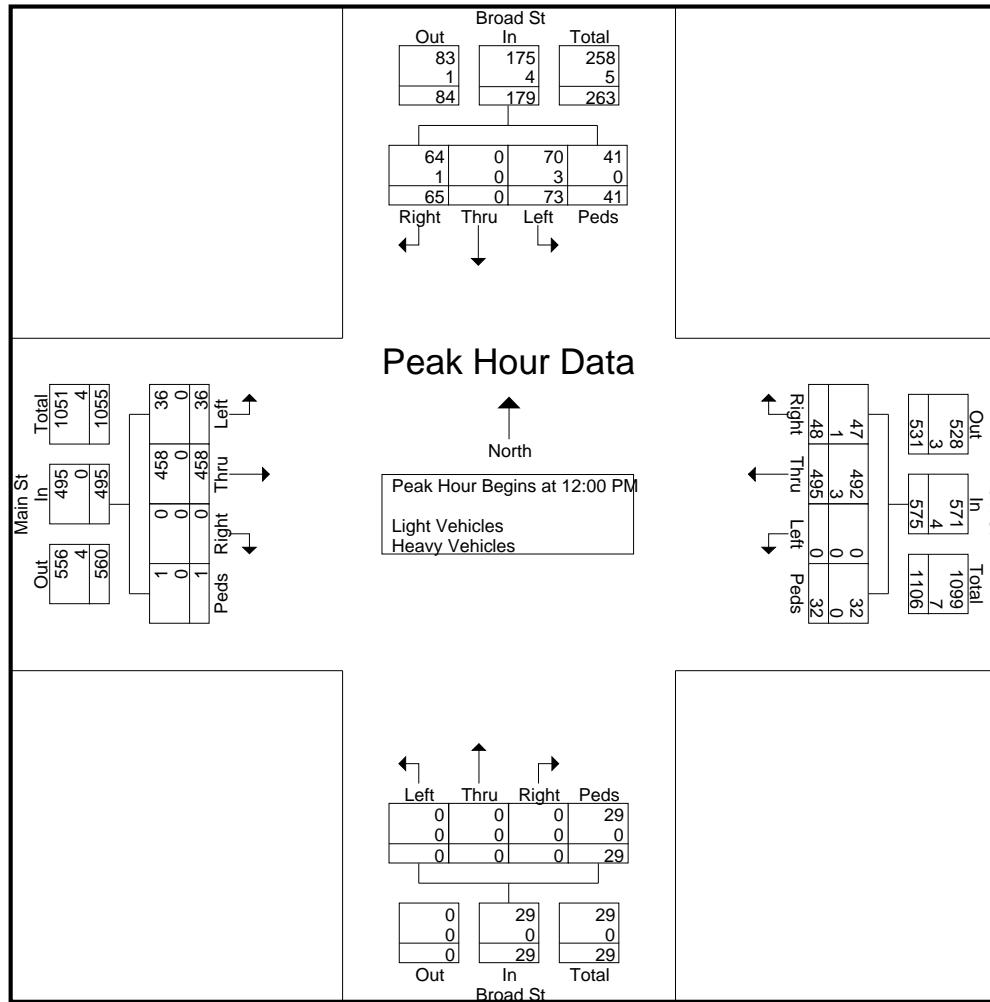
Other Notes: None

File Name : TMC - Main at Broad - 20170601 - Raw

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Start Date : 6/1/2017

Page No : 7



OHM Advisors

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Other Notes: None

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Site Code : 11111111

Start Date : 6/1/2017

Page No : 8

OHM Advisors

34000 Plymouth Road

Livonia, MI 48150

Advancing Communities

Weather: Sunny

SN: T-2737

County By: Julia Villaneuva

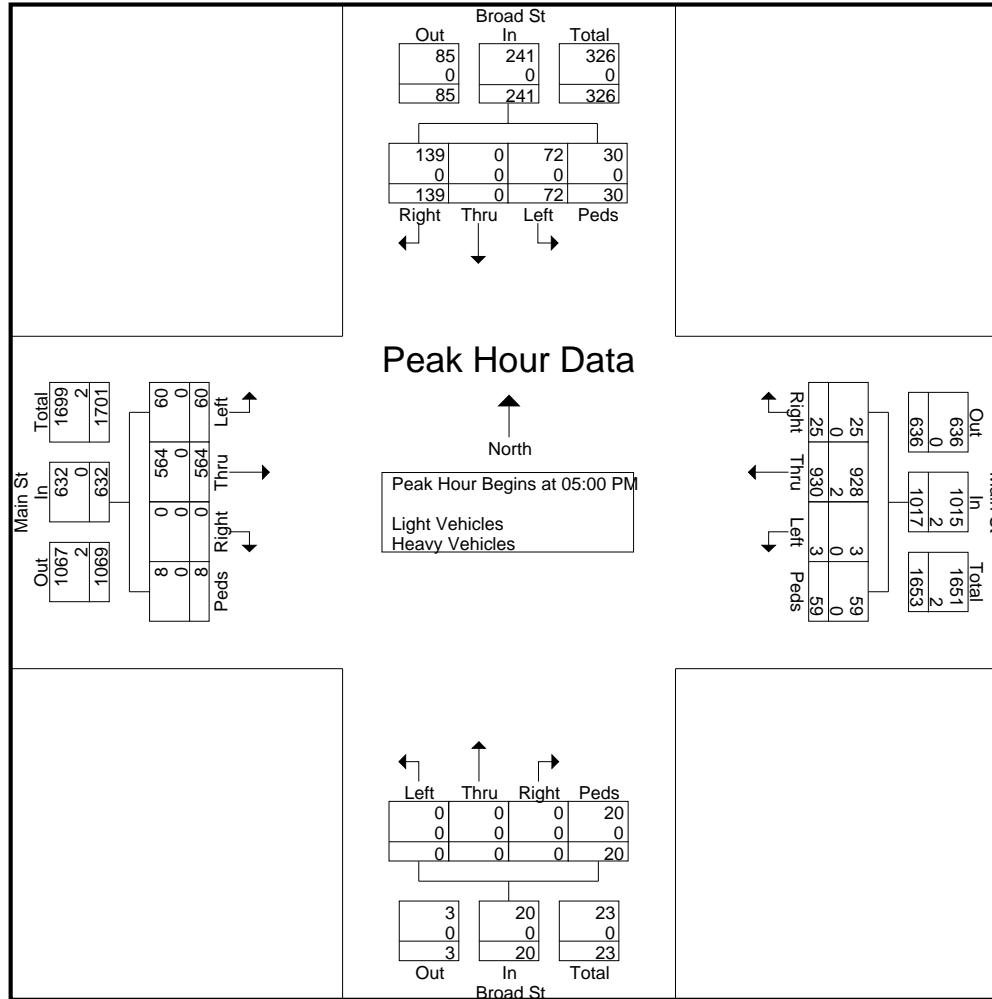
Other Notes: None

File Name : TMC - Main at Broad - 20170601 - Raw

Site Code : 11111111

Start Date : 6/1/2017

Page No : 9



OHM Advisors

34000 Plymouth Road

Livonia, MI 48150

Advancing Communities

Weather: Sunny

SN: T12-961

County By: Mariah Cummings

Other Notes: None

File Name : TMC - Main at Central - 20170601 - Raw

Site Code : 33333333

Start Date : 6/1/2017

Page No : 1

Groups Printed- Light Vehicles - Heavy Vehicles

Start Time	Central St Southbound					Main St Westbound					Dwy Northbound					Main St Eastbound					Int. Total
	Right	Thru	Left	Peds	App. Total	Right	Thru	Left	Peds	App. Total	Right	Thru	Left	Peds	App. Total	Right	Thru	Left	Peds	App. Total	
07:00 AM	6	0	23	0	29	6	35	0	0	41	1	0	0	0	1	0	246	9	0	255	326
07:15 AM	19	0	17	0	36	9	39	2	0	50	1	1	0	0	2	1	245	9	0	255	343
07:30 AM	25	0	15	0	40	10	60	1	0	71	5	0	0	3	8	2	218	16	6	242	361
07:45 AM	18	0	10	0	28	19	74	4	3	100	0	0	0	2	2	1	232	25	2	260	390
Total	68	0	65	0	133	44	208	7	3	262	7	1	0	5	13	4	941	59	8	1012	1420
08:00 AM	7	0	14	0	21	15	103	3	2	123	4	0	0	0	4	1	230	24	7	262	410
08:15 AM	14	2	14	0	30	14	73	4	0	91	2	0	0	1	3	1	217	11	2	231	355
08:30 AM	20	2	11	0	33	10	68	0	0	78	3	2	0	0	5	5	169	13	4	191	307
08:45 AM	18	1	11	1	31	11	65	3	1	80	2	0	1	0	3	7	176	15	3	201	315
Total	59	5	50	1	115	50	309	10	3	372	11	2	1	1	15	14	792	63	16	885	1387
*** BREAK ***																					
11:00 AM	7	1	12	0	20	17	101	2	2	122	5	1	0	1	7	7	87	11	3	108	257
11:15 AM	7	0	9	0	16	15	97	1	1	114	2	1	3	0	6	2	125	9	3	139	275
11:30 AM	15	3	11	1	30	14	121	1	0	136	2	1	0	2	5	0	108	17	3	128	299
11:45 AM	16	0	8	1	25	14	112	3	5	134	4	1	2	3	10	5	103	9	4	121	290
Total	45	4	40	2	91	60	431	7	8	506	13	4	5	6	28	14	423	46	13	496	1121
12:00 PM	18	0	9	0	27	19	114	3	2	138	4	2	3	7	16	9	88	22	5	124	305
12:15 PM	17	1	7	0	25	11	118	5	1	135	4	0	3	0	7	6	101	19	7	133	300
12:30 PM	16	0	5	0	21	17	116	1	3	137	3	0	1	3	7	8	130	22	10	170	335
12:45 PM	9	2	13	0	24	9	117	2	0	128	6	3	0	0	9	8	107	13	4	132	293
Total	60	3	34	0	97	56	465	11	6	538	17	5	7	10	39	31	426	76	26	559	1233
*** BREAK ***																					
04:00 PM	17	2	6	0	25	12	172	6	2	192	9	1	3	4	17	2	107	32	5	146	380
04:15 PM	10	0	6	0	16	3	210	1	9	223	6	0	2	3	11	4	112	25	2	143	393
04:30 PM	12	0	5	0	17	14	197	4	9	224	4	2	0	11	17	8	100	18	0	126	384
04:45 PM	11	0	6	0	17	12	196	4	4	216	9	0	0	10	19	5	120	16	9	150	402
Total	50	2	23	0	75	41	775	15	24	855	28	3	5	28	64	19	439	91	16	565	1559
05:00 PM	13	0	6	0	19	5	213	2	9	229	9	0	3	14	26	5	107	30	18	160	434
05:15 PM	19	1	6	0	26	5	203	3	2	213	11	0	0	9	20	5	117	21	3	146	405
05:30 PM	16	1	6	0	23	8	196	0	4	208	9	3	1	0	13	7	137	23	11	178	422
05:45 PM	13	0	2	0	15	8	185	1	3	197	6	1	0	6	13	7	123	29	15	174	399
Total	61	2	20	0	83	26	797	6	18	847	35	4	4	29	72	24	484	103	47	658	1660

OHM Advisors

34000 Plymouth Road

Livonia, MI 48150

Advancing Communities

Weather: Sunny

SN: T12-961

County By: Mariah Cummings

Other Notes: None

File Name : TMC - Main at Central - 20170601 - Raw

Site Code : 33333333

Start Date : 6/1/2017

Page No : 2

Groups Printed- Light Vehicles - Heavy Vehicles

	Central St Southbound					Main St Westbound					Dwy Northbound					Main St Eastbound					
	Right	Thru	Left	Peds	App. Total	Right	Thru	Left	Peds	App. Total	Right	Thru	Left	Peds	App. Total	Right	Thru	Left	Peds	App. Total	Int. Total
Grand Total	343	16	232	3	594	277	2985	56	62	3380	111	19	22	79	231	106	3505	438	126	4175	8380
Apprch %	57.7	2.7	39.1	0.5		8.2	88.3	1.7	1.8		48.1	8.2	9.5	34.2		2.5	84	10.5	3		
Total %	4.1	0.2	2.8	0	7.1	3.3	35.6	0.7	0.7	40.3	1.3	0.2	0.3	0.9	2.8	1.3	41.8	5.2	1.5	49.8	
Light Vehicles	342	16	230	2	590	272	2934	56	62	3324	111	19	22	79	231	105	3442	433	126	4106	8251
% Light Vehicles	99.7	100	99.1	66.7	99.3	98.2	98.3	100	100	98.3	100	100	100	100	100	99.1	98.2	98.9	100	98.3	98.5
Heavy Vehicles	1	0	2	1	4	5	51	0	0	56	0	0	0	0	0	1	63	5	0	69	129
% Heavy Vehicles	0.3	0	0.9	33.3	0.7	1.8	1.7	0	0	1.7	0	0	0	0	0	0.9	1.8	1.1	0	1.7	1.5

OHM Advisors

34000 Plymouth Road

Livonia, MI 48150

Advancing Communities

Weather: Sunny

SN: T12-961

County By: Mariah Cummings

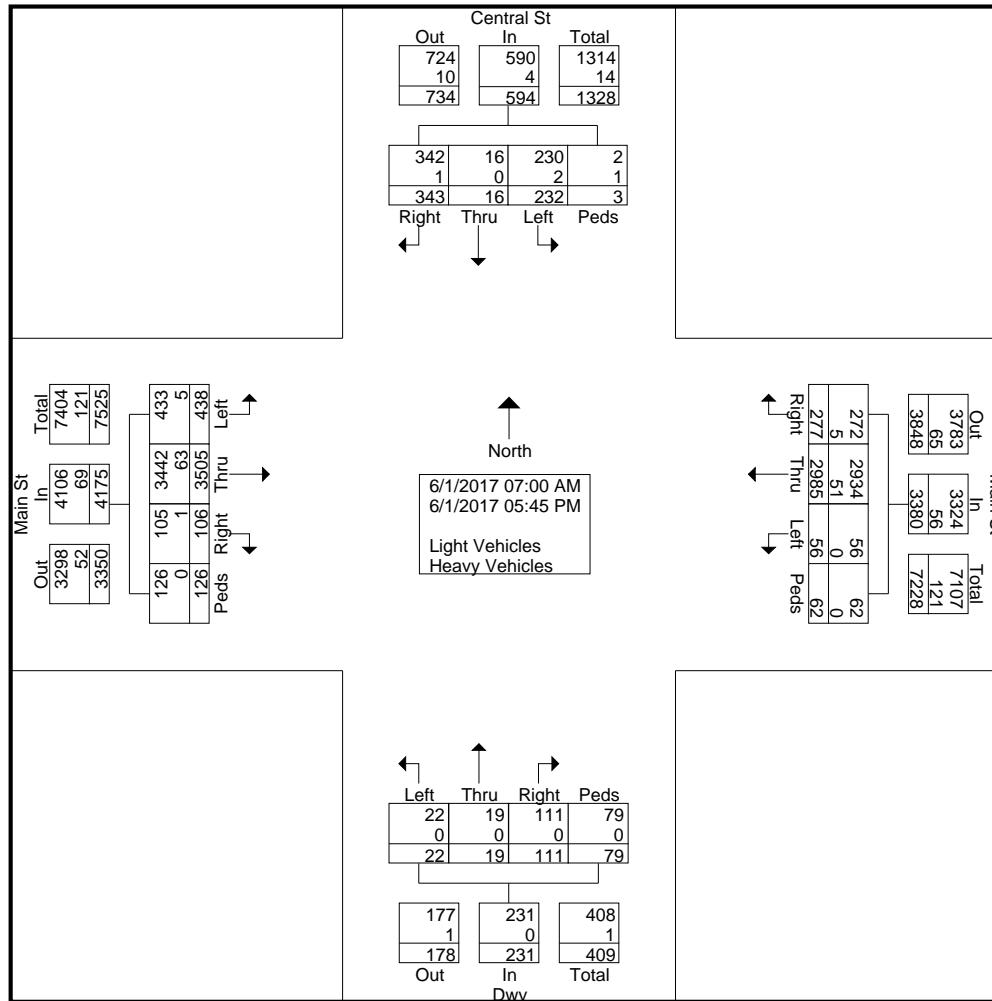
Other Notes: None

File Name : TMC - Main at Central - 20170601 - Raw

Site Code : 33333333

Start Date : 6/1/2017

Page No : 3



OHM Advisors

34000 Plymouth Road

Livonia, MI 48150

Advancing Communities

Weather: Sunny

SN: T12-961

County By: Mariah Cummings

Other Notes: None

File Name : TMC - Main at Central - 20170601 - Raw

Site Code : 33333333

Start Date : 6/1/2017

Page No : 4

	Central St Southbound					Main St Westbound					Dwy Northbound					Main St Eastbound					
Start Time	Right	Thru	Left	Peds	App. Total	Right	Thru	Left	Peds	App. Total	Right	Thru	Left	Peds	App. Total	Right	Thru	Left	Peds	App. Total	Int. Total
Peak Hour Analysis From 07:00 AM to 08:45 AM - Peak 1 of 1																					
Peak Hour for Entire Intersection Begins at 07:30 AM																					
07:30 AM	25	0	15	0	40	10	60	1	0	71	5	0	0	3	8	2	218	16	6	242	361
07:45 AM	18	0	10	0	28	19	74	4	3	100	0	0	0	2	2	1	232	25	2	260	390
08:00 AM	7	0	14	0	21	15	103	3	2	123	4	0	0	0	4	1	230	24	7	262	410
08:15 AM	14	2	14	0	30	14	73	4	0	91	2	0	0	1	3	1	217	11	2	231	355
Total Volume	64	2	53	0	119	58	310	12	5	385	11	0	0	6	17	5	897	76	17	995	1516
% App. Total	53.8	1.7	44.5	0		15.1	80.5	3.1	1.3		64.7	0	0	35.3		0.5	90.2	7.6	1.7		
PHF	.640	.250	.883	.000	.744	.763	.752	.750	.417	.783	.550	.000	.000	.500	.531	.625	.967	.760	.607	.949	.924
Light Vehicles	64	2	53	0	119	55	300	12	5	372	11	0	0	6	17	5	885	75	17	982	1490
% Light Vehicles	100	100	100	0	100	94.8	96.8	100	100	96.6	100	0	0	100	100	100	98.7	98.7	100	98.7	98.3
Heavy Vehicles	0	0	0	0	0	3	10	0	0	13	0	0	0	0	0	0	12	1	0	13	26
% Heavy Vehicles	0	0	0	0	0	5.2	3.2	0	0	3.4	0	0	0	0	0	0	1.3	1.3	0	1.3	1.7

OHM Advisors

34000 Plymouth Road

Livonia, MI 48150

Advancing Communities

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County By: Mariah Cummings

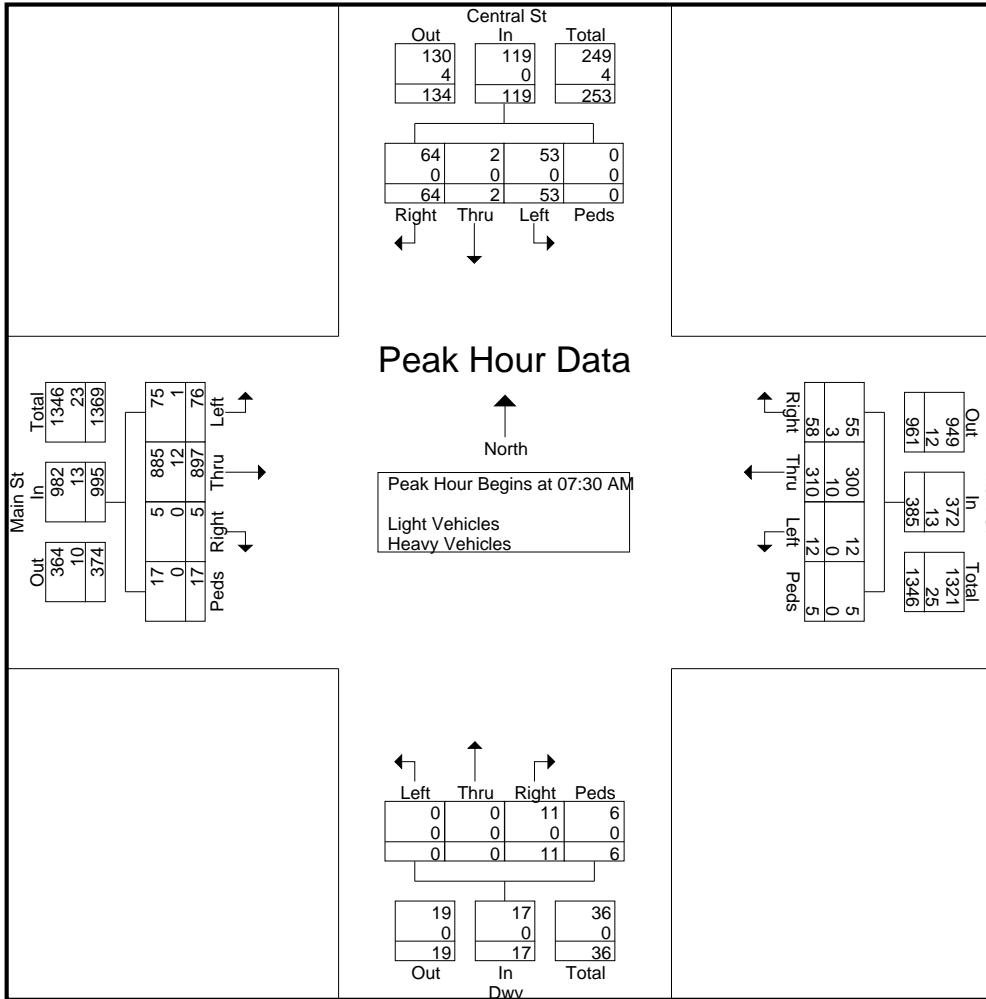
Other Notes: None

File Name : TMC - Main at Central - 20170601 - Raw

Site Code : 33333333

Start Date : 6/1/2017

Page No : 5



OHM Advisors

34000 Plymouth Road

Livonia, MI 48150

Advancing Communities

Weather: Sunny

SN: T12-961

County By: Mariah Cummings

Other Notes: None

File Name : TMC - Main at Central - 20170601 - Raw

Site Code : 33333333

Start Date : 6/1/2017

Page No : 6

Start Time	Central St Southbound					Main St Westbound					Dwy Northbound					Main St Eastbound					
	Right	Thru	Left	Peds	App. Total	Right	Thru	Left	Peds	App. Total	Right	Thru	Left	Peds	App. Total	Right	Thru	Left	Peds	App. Total	Int. Total
Peak Hour Analysis From 11:00 AM to 12:45 PM - Peak 1 of 1																					
Peak Hour for Entire Intersection Begins at 12:00 PM																					
12:00 PM	18	0	9	0	27	19	114	3	2	138	4	2	3	7	16	9	88	22	5	124	305
12:15 PM	17	1	7	0	25	11	118	5	1	135	4	0	3	0	7	6	101	19	7	133	300
12:30 PM	16	0	5	0	21	17	116	1	3	137	3	0	1	3	7	8	130	22	10	170	335
12:45 PM	9	2	13	0	24	9	117	2	0	128	6	3	0	0	9	8	107	13	4	132	293
Total Volume	60	3	34	0	97	56	465	11	6	538	17	5	7	10	39	31	426	76	26	559	1233
% App. Total	61.9	3.1	35.1	0		10.4	86.4	2	1.1		43.6	12.8	17.9	25.6		5.5	76.2	13.6	4.7		
PHF	.833	.375	.654	.000	.898	.737	.985	.550	.500	.975	.708	.417	.583	.357	.609	.861	.819	.864	.650	.822	.920
Light Vehicles	60	3	33	0	96	56	456	11	6	529	17	5	7	10	39	30	421	76	26	553	1217
% Light Vehicles	100	100	97.1	0	99.0	100	98.1	100	100	98.3	100	100	100	100	100	96.8	98.8	100	100	98.9	98.7
Heavy Vehicles	0	0	1	0	1	0	9	0	0	9	0	0	0	0	0	1	5	0	0	6	16
% Heavy Vehicles	0	0	2.9	0	1.0	0	1.9	0	0	1.7	0	0	0	0	0	3.2	1.2	0	0	1.1	1.3

OHM Advisors

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Livonia, MI 48150

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County By: Mariah Cummings

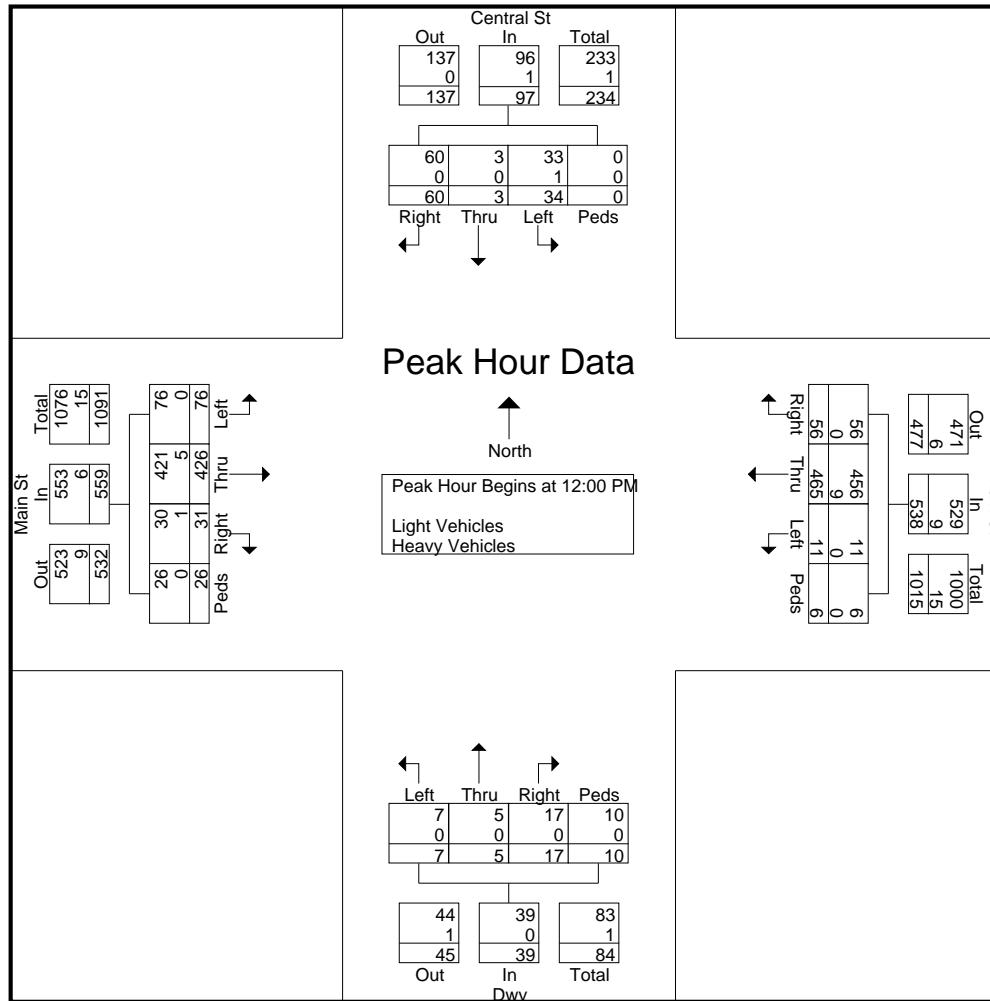
Other Notes: None

File Name : TMC - Main at Central - 20170601 - Raw

Site Code : 33333333

Start Date : 6/1/2017

Page No : 7



OHM Advisors

34000 Plymouth Road

Livonia, MI 48150

Advancing Communities

Weather: Sunny

SN: T12-961

County By: Mariah Cummings

Other Notes: None

File Name : TMC - Main at Central - 20170601 - Raw

Site Code : 33333333

Start Date : 6/1/2017

Page No : 8

Start Time	Central St Southbound					Main St Westbound					Dwy Northbound					Main St Eastbound					
	Right	Thru	Left	Peds	App. Total	Right	Thru	Left	Peds	App. Total	Right	Thru	Left	Peds	App. Total	Right	Thru	Left	Peds	App. Total	Int. Total
Peak Hour Analysis From 04:00 PM to 05:45 PM - Peak 1 of 1																					
Peak Hour for Entire Intersection Begins at 04:45 PM																					
04:45 PM	11	0	6	0	17	12	196	4	4	216	9	0	0	10	19	5	120	16	9	150	402
05:00 PM	13	0	6	0	19	5	213	2	9	229	9	0	3	14	26	5	107	30	18	160	434
05:15 PM	19	1	6	0	26	5	203	3	2	213	11	0	0	9	20	5	117	21	3	146	405
05:30 PM	16	1	6	0	23	8	196	0	4	208	9	3	1	0	13	7	137	23	11	178	422
Total Volume	59	2	24	0	85	30	808	9	19	866	38	3	4	33	78	22	481	90	41	634	1663
% App. Total	69.4	2.4	28.2	0		3.5	93.3	1	2.2		48.7	3.8	5.1	42.3		3.5	75.9	14.2	6.5		
PHF	.776	.500	1.00	.000	.817	.625	.948	.563	.528	.945	.864	.250	.333	.589	.750	.786	.878	.750	.569	.890	.958
Light Vehicles	58	2	24	0	84	30	800	9	19	858	38	3	4	33	78	22	477	90	41	630	1650
% Light Vehicles	98.3	100	100	0	98.8	100	99.0	100	100	99.1	100	100	100	100	100	100	99.2	100	100	99.4	99.2
Heavy Vehicles	1	0	0	0	1	0	8	0	0	8	0	0	0	0	0	0	4	0	0	4	13
% Heavy Vehicles	1.7	0	0	0	1.2	0	1.0	0	0	0.9	0	0	0	0	0	0	0.8	0	0	0.6	0.8

OHM Advisors

34000 Plymouth Road

Livonia, MI 48150

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County By: Mariah Cummings

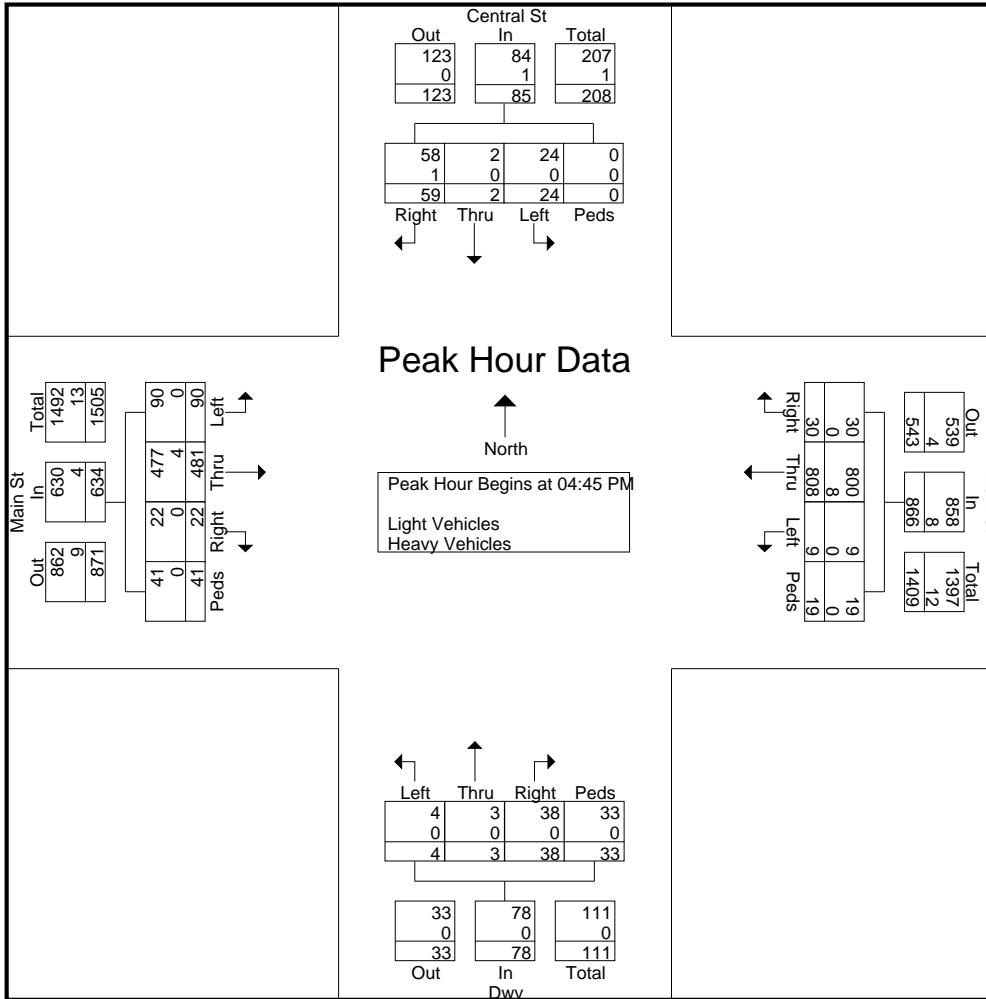
Other Notes: None

File Name : TMC - Main at Central - 20170601 - Raw

Site Code : 33333333

Start Date : 6/1/2017

Page No : 9



APPENDIX B

SYNCHRO/SIMTRAFFIC REPORTS

SIMTRAFFIC VALIDATION REPORTS

SimTraffic Simulation Summary

Existing

08/02/2017

Summary of All Intervals

Run Number	17	18	19	20	21	Avg
Start Time	7:20	7:20	7:20	7:20	7:20	7:20
End Time	8:30	8:30	8:30	8:30	8:30	8:30
Total Time (min)	70	70	70	70	70	70
Time Recorded (min)	60	60	60	60	60	60
# of Intervals	4	4	4	4	4	4
# of Recorded Intervals	3	3	3	3	3	3
Vehs Entered	2012	1872	1916	1940	1900	1931
Vehs Exited	2029	1887	1918	1952	1899	1937
Starting Vehs	47	39	32	45	34	36
Ending Vehs	30	24	30	33	35	29
Travel Distance (mi)	591	556	560	570	552	566
Travel Time (hr)	60.5	41.6	40.5	54.2	42.8	47.9
Total Delay (hr)	35.5	18.0	16.7	29.9	19.3	23.9
Total Stops	2156	1821	1857	2072	1916	1965
Fuel Used (gal)	30.8	25.2	24.6	28.4	25.1	26.8

Interval #0 Information Seeding

Start Time	7:20
End Time	7:30
Total Time (min)	10
Volumes adjusted by Growth Factors.	
No data recorded this interval.	

Interval #1 Information Pre

Start Time	7:30
End Time	7:45
Total Time (min)	15
Volumes adjusted by Growth Factors, Anti PHF.	

Run Number	17	18	19	20	21	Avg
Vehs Entered	498	447	466	444	460	464
Vehs Exited	491	443	468	446	455	460
Starting Vehs	47	39	32	45	34	36
Ending Vehs	54	43	30	43	39	42
Travel Distance (mi)	147	136	139	133	137	138
Travel Time (hr)	13.3	9.6	10.4	9.2	9.9	10.5
Total Delay (hr)	7.1	3.9	4.6	3.5	4.0	4.6
Total Stops	489	413	508	406	447	453
Fuel Used (gal)	7.1	5.9	6.3	5.9	6.0	6.2

SimTraffic Simulation Summary

Existing

08/02/2017

Interval #2 Information Peak

Start Time 7:45

End Time 8:00

Total Time (min) 15

Volumes adjusted by PHF, Growth Factors.

Run Number	17	18	19	20	21	Avg
Vehs Entered	575	542	554	587	580	570
Vehs Exited	544	531	535	540	560	542
Starting Vehs	54	43	30	43	39	42
Ending Vehs	85	54	49	90	59	66
Travel Distance (mi)	160	154	156	159	159	157
Travel Time (hr)	16.4	12.0	11.9	18.8	14.0	14.6
Total Delay (hr)	9.7	5.5	5.3	12.1	7.3	8.0
Total Stops	677	543	587	809	645	654
Fuel Used (gal)	8.4	7.1	7.0	8.9	7.6	7.8

Interval #3 Information Post

Start Time 8:00

End Time 8:30

Total Time (min) 30

Volumes adjusted by Growth Factors, Anti PHF.

Run Number	17	18	19	20	21	Avg
Vehs Entered	939	883	896	909	860	897
Vehs Exited	994	913	915	966	884	934
Starting Vehs	85	54	49	90	59	66
Ending Vehs	30	24	30	33	35	29
Travel Distance (mi)	284	266	266	278	256	270
Travel Time (hr)	30.8	20.0	18.2	26.1	18.9	22.8
Total Delay (hr)	18.7	8.6	6.8	14.3	8.0	11.3
Total Stops	990	865	762	857	824	860
Fuel Used (gal)	15.3	12.2	11.3	13.6	11.4	12.8

SimTraffic Performance Report

Existing

08/02/2017

1: Baker Rd & Main St Performance by movement

Movement	SET	SER	NWL	NWT	NEL	NER	All
Vehicles Entered	421	574	119	153	227	69	1563
Vehicles Exited	420	576	119	153	225	69	1562
Hourly Exit Rate	420	576	119	153	225	69	1562
Input Volume	410	571	123	151	231	71	1557
% of Volume	102	101	97	101	97	97	100

4: Dwy/Central St & Main St Performance by movement

Movement	SEL	SET	SER	NWL	NWT	NWR	NEL	NER	SWL	SWT	SWR	All
Vehicles Entered	75	942	5	10	318	62	6	10	60	3	66	1557
Vehicles Exited	75	942	5	10	318	63	6	10	61	3	68	1561
Hourly Exit Rate	75	942	5	10	318	63	6	10	61	3	68	1561
Input Volume	76	938	5	12	324	58	6	11	53	2	64	1552
% of Volume	98	100	100	83	98	108	96	89	115	133	106	101

9: Main St & Broad St Performance by movement

Movement	SBL	SBR	SEL	SET	NWT	NWR	All
Vehicles Entered	136	145	18	885	334	41	1559
Vehicles Exited	136	146	17	886	335	41	1561
Hourly Exit Rate	136	146	17	886	335	41	1561
Input Volume	141	151	15	878	338	43	1566
% of Volume	96	97	111	101	99	95	100

Total Network Performance

Vehicles Entered	1931
Vehicles Exited	1937
Hourly Exit Rate	1937
Input Volume	7268
% of Volume	27

SimTraffic Simulation Summary

Existing

08/02/2017

Summary of All Intervals

Run Number	17	18	19	20	21	Avg
Start Time	11:50	11:50	11:50	11:50	11:50	11:50
End Time	1:00	1:00	1:00	1:00	1:00	1:00
Total Time (min)	70	70	70	70	70	70
Time Recorded (min)	60	60	60	60	60	60
# of Intervals	4	4	4	4	4	4
# of Recorded Intervals	3	3	3	3	3	3
Vehs Entered	1384	1420	1383	1422	1388	1397
Vehs Exited	1388	1427	1408	1429	1385	1407
Starting Vehs	26	28	41	25	31	30
Ending Vehs	22	21	16	18	34	22
Travel Distance (mi)	414	422	414	424	405	416
Travel Time (hr)	26.6	26.5	26.4	28.0	25.8	26.7
Total Delay (hr)	9.1	8.7	8.8	10.0	8.6	9.0
Total Stops	1308	1226	1271	1349	1226	1273
Fuel Used (gal)	17.2	17.5	17.3	17.9	16.9	17.4

Interval #0 Information Seeding

Start Time	11:50
End Time	12:00
Total Time (min)	10
Volumes adjusted by Growth Factors.	
No data recorded this interval.	

Interval #1 Information Pre

Start Time	12:00
End Time	12:15
Total Time (min)	15
Volumes adjusted by Growth Factors, Anti PHF.	

Run Number	17	18	19	20	21	Avg
Vehs Entered	330	340	332	363	324	336
Vehs Exited	333	330	351	362	332	341
Starting Vehs	26	28	41	25	31	30
Ending Vehs	23	38	22	26	23	25
Travel Distance (mi)	100	99	104	109	96	102
Travel Time (hr)	5.9	6.2	6.8	6.6	5.9	6.3
Total Delay (hr)	1.7	2.1	2.5	2.0	1.8	2.0
Total Stops	274	274	313	323	266	291
Fuel Used (gal)	4.1	4.2	4.4	4.4	4.0	4.2

SimTraffic Simulation Summary

Existing

08/02/2017

Interval #2 Information Peak

Start Time 12:15

End Time 12:30

Total Time (min) 15

Volumes adjusted by PHF, Growth Factors.

Run Number	17	18	19	20	21	Avg
Vehs Entered	386	405	413	401	427	405
Vehs Exited	373	408	400	396	418	400
Starting Vehs	23	38	22	26	23	25
Ending Vehs	36	35	35	31	32	33
Travel Distance (mi)	110	119	118	117	121	117
Travel Time (hr)	7.4	8.0	7.6	8.1	8.0	7.8
Total Delay (hr)	2.8	3.0	2.6	3.2	2.9	2.9
Total Stops	358	378	385	374	421	383
Fuel Used (gal)	4.6	5.0	5.0	5.1	5.2	5.0

Interval #3 Information Post

Start Time 12:30

End Time 1:00

Total Time (min) 30

Volumes adjusted by Growth Factors, Anti PHF.

Run Number	17	18	19	20	21	Avg
Vehs Entered	668	675	638	658	637	655
Vehs Exited	682	689	657	671	635	665
Starting Vehs	36	35	35	31	32	33
Ending Vehs	22	21	16	18	34	22
Travel Distance (mi)	204	205	192	199	188	197
Travel Time (hr)	13.2	12.3	11.9	13.3	11.9	12.5
Total Delay (hr)	4.6	3.7	3.7	4.9	4.0	4.2
Total Stops	676	574	573	652	539	603
Fuel Used (gal)	8.5	8.3	7.9	8.5	7.7	8.2

SimTraffic Performance Report

Existing

08/02/2017

1: Baker Rd & Main St Performance by movement

Movement	SET	SER	NWL	NWT	NEL	NER	All
Vehicles Entered	214	274	24	238	296	63	1109
Vehicles Exited	214	274	24	238	297	63	1110
Hourly Exit Rate	214	274	24	238	297	63	1110
Input Volume	218	274	28	238	311	58	1127
% of Volume	98	100	86	100	95	109	98

4: Dwy/Central St & Main St Performance by movement

Movement	SEL	SET	SER	NWL	NWT	NWR	NEL	NET	NER	SWL	SWT	SWR
Vehicles Entered	76	423	26	12	470	55	10	4	15	38	1	61
Vehicles Exited	76	424	26	12	471	55	10	4	15	38	1	61
Hourly Exit Rate	76	424	26	12	471	55	10	4	15	38	1	61
Input Volume	76	429	31	11	484	56	7	5	17	34	3	60
% of Volume	100	99	83	107	97	98	138	80	90	111	33	101

4: Dwy/Central St & Main St Performance by movement

Movement	All
Vehicles Entered	1191
Vehicles Exited	1193
Hourly Exit Rate	1193
Input Volume	1213
% of Volume	98

9: Main St & Broad St Performance by movement

Movement	SBL	SBR	SEL	SET	NWT	NWR	All
Vehicles Entered	65	68	33	454	488	46	1154
Vehicles Exited	66	69	32	455	489	47	1158
Hourly Exit Rate	66	69	32	455	489	47	1158
Input Volume	73	65	36	458	496	48	1176
% of Volume	90	107	90	99	99	97	98

Total Network Performance

Total Network Performance	
Vehicles Entered	1397
Vehicles Exited	1407
Hourly Exit Rate	1407
Input Volume	5430
% of Volume	26

SimTraffic Simulation Summary

Existing

08/02/2017

Summary of All Intervals

Run Number	17	18	19	20	21	Avg
Start Time	4:50	4:50	4:50	4:50	4:50	4:50
End Time	6:00	6:00	6:00	6:00	6:00	6:00
Total Time (min)	70	70	70	70	70	70
Time Recorded (min)	60	60	60	60	60	60
# of Intervals	4	4	4	4	4	4
# of Recorded Intervals	3	3	3	3	3	3
Vehs Entered	2142	2137	2246	2233	2193	2189
Vehs Exited	2108	2169	2208	2190	2167	2168
Starting Vehs	37	71	45	38	52	44
Ending Vehs	71	39	83	81	78	71
Travel Distance (mi)	617	630	647	645	631	634
Travel Time (hr)	71.6	66.7	68.5	73.1	78.1	71.6
Total Delay (hr)	45.8	40.2	41.2	45.9	51.6	44.9
Total Stops	3378	3228	3311	3563	3769	3451
Fuel Used (gal)	34.8	34.2	34.8	36.1	37.5	35.5

Interval #0 Information Seeding

Start Time	4:50
End Time	5:00
Total Time (min)	10
Volumes adjusted by Growth Factors.	
No data recorded this interval.	

Interval #1 Information Pre

Start Time	5:00
End Time	5:15
Total Time (min)	15
Volumes adjusted by Growth Factors, Anti PHF.	

Run Number	17	18	19	20	21	Avg
Vehs Entered	501	507	578	542	499	526
Vehs Exited	500	528	578	538	502	530
Starting Vehs	37	71	45	38	52	44
Ending Vehs	38	50	45	42	49	41
Travel Distance (mi)	147	155	168	160	144	155
Travel Time (hr)	10.4	17.8	13.4	12.4	11.9	13.2
Total Delay (hr)	4.3	11.4	6.3	5.7	5.8	6.7
Total Stops	600	912	729	694	658	717
Fuel Used (gal)	6.6	9.0	7.9	7.5	7.0	7.6

SimTraffic Simulation Summary

Existing

08/02/2017

Interval #2 Information Peak

Start Time 5:15

End Time 5:30

Total Time (min) 15

Volumes adjusted by PHF, Growth Factors.

Run Number	17	18	19	20	21	Avg
Vehs Entered	628	595	587	621	591	603
Vehs Exited	607	573	578	571	563	578
Starting Vehs	38	50	45	42	49	41
Ending Vehs	59	72	54	92	77	70
Travel Distance (mi)	173	168	166	169	166	168
Travel Time (hr)	16.0	16.9	15.0	16.6	23.1	17.5
Total Delay (hr)	8.7	9.9	7.9	9.5	16.2	10.4
Total Stops	875	752	784	907	1102	883
Fuel Used (gal)	8.8	8.7	8.3	8.8	10.5	9.0

Interval #3 Information Post

Start Time 5:30

End Time 6:00

Total Time (min) 30

Volumes adjusted by Growth Factors, Anti PHF.

Run Number	17	18	19	20	21	Avg
Vehs Entered	1013	1035	1081	1070	1103	1061
Vehs Exited	1001	1068	1052	1081	1102	1060
Starting Vehs	59	72	54	92	77	70
Ending Vehs	71	39	83	81	78	71
Travel Distance (mi)	296	307	313	316	321	311
Travel Time (hr)	45.2	32.0	40.1	44.1	43.1	40.9
Total Delay (hr)	32.8	19.0	26.9	30.8	29.6	27.8
Total Stops	1903	1564	1798	1962	2009	1847
Fuel Used (gal)	19.4	16.5	18.6	19.8	20.0	18.9

SimTraffic Performance Report

Existing

08/02/2017

1: Baker Rd & Main St Performance by movement

Movement	SET	SER	NWL	NWT	NEL	NER	All
Vehicles Entered	282	264	57	456	367	215	1641
Vehicles Exited	283	263	57	454	358	213	1628
Hourly Exit Rate	283	263	57	454	358	213	1628
Input Volume	290	253	53	459	379	227	1660
% of Volume	98	104	108	99	95	94	98

4: Dwy/Central St & Main St Performance by movement

Movement	SEL	SET	SER	NWL	NWT	NWR	NEL	NET	NER	SWL	SWT	SWR
Vehicles Entered	93	527	26	9	784	29	4	3	41	26	3	65
Vehicles Exited	90	527	26	9	785	30	4	3	41	26	3	64
Hourly Exit Rate	90	527	26	9	785	30	4	3	41	26	3	64
Input Volume	90	530	22	9	809	30	4	3	38	24	2	59
% of Volume	100	99	118	100	97	101	94	92	107	109	150	108

4: Dwy/Central St & Main St Performance by movement

Movement	All
Vehicles Entered	1610
Vehicles Exited	1608
Hourly Exit Rate	1608
Input Volume	1621
% of Volume	99

9: Main St & Broad St Performance by movement

Movement	SBL	SBR	SEL	SET	NWT	NWR	All
Vehicles Entered	76	152	56	565	912	24	1785
Vehicles Exited	75	152	55	565	914	23	1784
Hourly Exit Rate	75	152	55	565	914	23	1784
Input Volume	72	139	60	564	930	25	1790
% of Volume	104	110	92	100	98	93	100

Total Network Performance

Total Network Performance	
Vehicles Entered	2189
Vehicles Exited	2168
Hourly Exit Rate	2168
Input Volume	8213
% of Volume	26

SYNCHRO HCM LOS REPORTS

EXISTING

Lanes, Volumes, Timings
1: Baker Rd & Main St

08/02/2017



Lane Group	SET	SER	NWL	NWT	NEL	NER
Lane Configurations	↑	↗	↘	↑	↗	↘
Traffic Volume (vph)	406	571	123	151	231	71
Future Volume (vph)	406	571	123	151	231	71
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Storage Length (ft)		100	65		150	0
Storage Lanes		1	1		1	1
Taper Length (ft)			75		75	
Lane Util. Factor	1.00	1.00	1.00	1.00	1.00	1.00
Ped Bike Factor		0.94	0.97		0.99	0.97
Fr _t		0.850			0.850	
Flt Protected			0.950		0.950	
Satd. Flow (prot)	1863	1583	1719	1583	1736	1359
Flt Permitted			0.950		0.950	
Satd. Flow (perm)	1863	1481	1676	1583	1726	1324
Right Turn on Red		Yes			Yes	
Satd. Flow (RTOR)		601			101	
Link Speed (mph)	25			25	30	
Link Distance (ft)	370			181	510	
Travel Time (s)	10.1			4.9	11.6	
Confl. Peds. (#/hr)		17	17		2	2
Peak Hour Factor	0.95	0.95	0.76	0.76	0.70	0.70
Heavy Vehicles (%)	2%	2%	5%	5%	4%	4%
Parking (#/hr)				5	5	
Adj. Flow (vph)	427	601	162	199	330	101
Shared Lane Traffic (%)						
Lane Group Flow (vph)	427	601	162	199	330	101
Enter Blocked Intersection	No	No	No	No	No	No
Lane Alignment	Left	Right	Left	Left	Left	Right
Median Width(ft)	12			12	12	
Link Offset(ft)	0			0	0	
Crosswalk Width(ft)	16			16	16	
Two way Left Turn Lane	Yes			Yes		
Headway Factor	1.00	1.00	1.00	1.19	1.00	1.19
Turning Speed (mph)		9	15		15	9
Number of Detectors	0	0	1	0	1	1
Detector Template						
Leading Detector (ft)	0	0	20	0	20	20
Trailing Detector (ft)	0	0	0	0	0	0
Detector 1 Position(ft)	0	0	0	0	0	0
Detector 1 Size(ft)	6	20	20	6	20	20
Detector 1 Type	Call	Call	Cl+Ex	Call	Cl+Ex	Cl+Ex
Detector 1 Channel						
Detector 1 Extend (s)	0.0	0.0	0.0	0.0	0.0	0.0
Detector 1 Queue (s)	0.0	0.0	0.0	0.0	0.0	0.0
Detector 1 Delay (s)	0.0	0.0	5.0	0.0	3.0	3.0
Turn Type	NA	Perm	Prot	NA	Prot	Perm
Protected Phases	1		3	1 3	2	
Permitted Phases		1			2	
Detector Phase	1	1	3	1 3	2	2



Lane Group	SET	SER	NWL	NWT	NEL	NER
Switch Phase						
Minimum Initial (s)	4.0	4.0	4.0		4.0	4.0
Minimum Split (s)	20.0	20.0	9.0		20.0	20.0
Total Split (s)	46.0	46.0	12.0		22.0	22.0
Total Split (%)	57.5%	57.5%	15.0%		27.5%	27.5%
Maximum Green (s)	41.0	41.0	7.0		17.0	17.0
Yellow Time (s)	4.5	4.5	4.5		4.5	4.5
All-Red Time (s)	0.5	0.5	0.5		0.5	0.5
Lost Time Adjust (s)	0.0	0.0	0.0		0.0	0.0
Total Lost Time (s)	5.0	5.0	5.0		5.0	5.0
Lead/Lag	Lead	Lead		Lag	Lag	
Lead-Lag Optimize?						
Vehicle Extension (s)	0.2	0.2	3.0		3.0	3.0
Recall Mode	C-Max	C-Max	None		None	None
Walk Time (s)	7.0	7.0			7.0	7.0
Flash Dont Walk (s)	8.0	8.0			8.0	8.0
Pedestrian Calls (#/hr)	0	0			2	2
Act Effct Green (s)	41.0	41.0	7.3	53.3	16.7	16.7
Actuated g/C Ratio	0.51	0.51	0.09	0.67	0.21	0.21
v/c Ratio	0.45	0.57	1.04	0.19	0.91	0.28
Control Delay	14.5	3.5	122.7	5.7	62.6	8.3
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	14.5	3.5	122.7	5.7	62.6	8.3
LOS	B	A	F	A	E	A
Approach Delay	8.0			58.2	49.9	
Approach LOS	A			E	D	

Intersection Summary

Area Type: Other

Cycle Length: 80

Actuated Cycle Length: 80

Offset: 0 (0%), Referenced to phase 1:NWSE, Start of Green

Natural Cycle: 60

Control Type: Actuated-Coordinated

Maximum v/c Ratio: 1.04

Intersection Signal Delay: 27.9

Intersection LOS: C

Intersection Capacity Utilization 53.5%

ICU Level of Service A

Analysis Period (min) 15

Splits and Phases: 1: Baker Rd & Main St





Lane Group	SBL	SBR	SEL	SET	NWT	NWR
Lane Configurations	1	1	1	1	1	1
Traffic Volume (vph)	141	151	15	878	308	43
Future Volume (vph)	141	151	15	878	308	43
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Storage Length (ft)	0	60	100		0	
Storage Lanes	1	1	1		0	
Taper Length (ft)	25		75			
Lane Util. Factor	1.00	1.00	1.00	1.00	1.00	1.00
Ped Bike Factor	0.96	0.93	0.96		0.99	
Fr _t		0.850			0.983	
Flt Protected	0.950		0.950			
Satd. Flow (prot)	1392	1246	1433	1341	1305	0
Flt Permitted	0.950		0.950			
Satd. Flow (perm)	1341	1156	1383	1341	1305	0
Right Turn on Red		Yes			Yes	
Satd. Flow (RTOR)		191			14	
Link Speed (mph)	25		25	25		
Link Distance (ft)	555		607	235		
Travel Time (s)	15.1			16.6	6.4	
Confl. Peds. (#/hr)	11	16	19		19	
Peak Hour Factor	0.79	0.79	0.95	0.95	0.83	0.83
Heavy Vehicles (%)	5%	5%	2%	2%	2%	2%
Parking (#/hr)	0	0	0	20	20	20
Adj. Flow (vph)	178	191	16	924	371	52
Shared Lane Traffic (%)						
Lane Group Flow (vph)	178	191	16	924	423	0
Enter Blocked Intersection	No	No	No	No	No	No
Lane Alignment	Left	Right	Left	Left	Left	Right
Median Width(ft)	12			12	12	
Link Offset(ft)	0			0	0	
Crosswalk Width(ft)	16			16	16	
Two way Left Turn Lane			Yes			
Headway Factor	1.30	1.30	1.30	1.51	1.51	1.14
Turning Speed (mph)	15	9	15			9
Number of Detectors	1	1	1	0	0	
Detector Template						
Leading Detector (ft)	20	20	20	0	0	
Trailing Detector (ft)	0	0	0	0	0	
Detector 1 Position(ft)	0	0	0	0	0	
Detector 1 Size(ft)	20	20	20	6	6	
Detector 1 Type	Cl+Ex	Cl+Ex	Cl+Ex	Call	Call	
Detector 1 Channel						
Detector 1 Extend (s)	0.0	0.0	0.0	0.0	0.0	
Detector 1 Queue (s)	0.0	0.0	0.0	0.0	0.0	
Detector 1 Delay (s)	3.0	3.0	3.0	0.0	0.0	
Turn Type	Prot	Perm	Prot	NA	NA	
Protected Phases	2		3	1 3	1	
Permitted Phases		2				
Detector Phase	2	2	3	1 3	1	



Lane Group	SBL	SBR	SEL	SET	NWT	NWR
Switch Phase						
Minimum Initial (s)	7.0	7.0	4.0		10.0	
Minimum Split (s)	15.0	15.0	8.0		17.0	
Total Split (s)	20.0	20.0	10.0		50.0	
Total Split (%)	25.0%	25.0%	12.5%		62.5%	
Maximum Green (s)	15.0	15.0	6.0		45.0	
Yellow Time (s)	4.5	4.5	3.5		4.5	
All-Red Time (s)	0.5	0.5	0.5		0.5	
Lost Time Adjust (s)	0.0	0.0	0.0		0.0	
Total Lost Time (s)	5.0	5.0	4.0		5.0	
Lead/Lag	Lag	Lag		Lead		
Lead-Lag Optimize?						
Vehicle Extension (s)	3.0	3.0	3.0		0.2	
Recall Mode	None	None	None		C-Max	
Walk Time (s)	12.0	12.0			12.0	
Flash Dont Walk (s)	0.0	0.0			0.0	
Pedestrian Calls (#/hr)	8	8			0	
Act Effct Green (s)	13.5	13.5	7.5	56.5	45.0	
Actuated g/C Ratio	0.17	0.17	0.09	0.71	0.56	
v/c Ratio	0.76	0.54	0.12	0.98	0.57	
Control Delay	52.7	11.0	36.9	38.7	23.5	
Queue Delay	0.0	0.0	0.0	0.0	0.0	
Total Delay	52.7	11.0	36.9	38.7	23.5	
LOS	D	B	D	D	C	
Approach Delay	31.1			38.7	23.5	
Approach LOS	C			D	C	

Intersection Summary

Area Type: CBD

Cycle Length: 80

Actuated Cycle Length: 80

Offset: 10 (13%), Referenced to phase 1:NWSE, Start of Green

Natural Cycle: 90

Control Type: Actuated-Coordinated

Maximum v/c Ratio: 0.98

Intersection Signal Delay: 33.3

Intersection LOS: C

Intersection Capacity Utilization 68.9%

ICU Level of Service C

Analysis Period (min) 15

Splits and Phases: 9: Main St & Broad St



Intersection												
Int Delay, s/veh	18.2											
Movement	SEL	SET	SER	NWL	NWT	NWR	NEL	NET	NER	SWL	SWT	SWR
Lane Configurations	↑	↑		↑	↑		↓	↓		↓	↓	
Traffic Vol, veh/h	76	897	5	12	310	58	6	0	11	53	2	64
Future Vol, veh/h	76	897	5	12	310	58	6	0	11	53	2	64
Conflicting Peds, #/hr	5	0	17	17	0	5	0	0	6	6	0	0
Sign Control	Free	Free	Free	Free	Free	Free	Stop	Stop	Stop	Stop	Stop	Stop
RT Channelized	-	-	None	-	-	None	-	-	None	-	-	None
Storage Length	75	-	-	75	-	-	-	-	-	-	-	-
Veh in Median Storage, #	-	0	-	-	0	-	-	0	-	-	0	-
Grade, %	-	0	-	-	0	-	-	0	-	-	0	-
Peak Hour Factor	95	95	95	78	78	78	60	60	60	74	74	74
Heavy Vehicles, %	1	1	1	3	3	3	0	0	0	3	3	3
Mvmt Flow	80	944	5	15	397	74	10	0	18	72	3	86
Major/Minor	Major1			Major2			Minor1			Minor2		
Conflicting Flow All	477	0	0	966	0	0	1634	1632	970	1592	1596	440
Stage 1	-	-	-	-	-	-	1124	1124	-	470	470	-
Stage 2	-	-	-	-	-	-	510	508	-	1122	1126	-
Critical Hdwy	4.11	-	-	4.13	-	-	7.1	6.5	6.2	7.13	6.53	6.23
Critical Hdwy Stg 1	-	-	-	-	-	-	6.1	5.5	-	6.13	5.53	-
Critical Hdwy Stg 2	-	-	-	-	-	-	6.1	5.5	-	6.13	5.53	-
Follow-up Hdwy	2.209	-	-	2.227	-	-	3.5	4	3.3	3.527	4.027	3.327
Pot Cap-1 Maneuver	1090	-	-	709	-	-	82	102	310	86	106	615
Stage 1	-	-	-	-	-	-	252	283	-	572	558	-
Stage 2	-	-	-	-	-	-	550	542	-	249	279	-
Platoon blocked, %	-	-	-	-	-	-						
Mov Cap-1 Maneuver	1090	-	-	705	-	-	63	91	303	74	94	612
Mov Cap-2 Maneuver	-	-	-	-	-	-	63	91	-	74	94	-
Stage 1	-	-	-	-	-	-	230	258	-	527	544	-
Stage 2	-	-	-	-	-	-	460	528	-	216	254	-
Approach	SE			NW			NE			SW		
HCM Control Delay, s	0.7			0.3			40.6			180.9		
HCM LOS							E			F		
Minor Lane/Major Mvmt	NELn1	NWL	NWT	NWR	SEL	SET	SERSWLn1					
Capacity (veh/h)	129	705	-	-	1090	-	-	141				
HCM Lane V/C Ratio	0.22	0.022	-	-	0.073	-	-	1.141				
HCM Control Delay (s)	40.6	10.2	-	-	8.6	-	-	180.9				
HCM Lane LOS	E	B	-	-	A	-	-	F				
HCM 95th %tile Q(veh)	0.8	0.1	-	-	0.2	-	-	9.1				

Lanes, Volumes, Timings
1: Baker Rd & Main St

08/02/2017



Lane Group	SET	SER	NWL	NWT	NEL	NER
Lane Configurations	↑	↑	↑	↑	↑	↑
Traffic Volume (vph)	202	274	28	238	311	58
Future Volume (vph)	202	274	28	238	311	58
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Storage Length (ft)		100	65		150	0
Storage Lanes		1	1		1	1
Taper Length (ft)			75		75	
Lane Util. Factor	1.00	1.00	1.00	1.00	1.00	1.00
Ped Bike Factor		0.97	0.99		1.00	
Fr _t		0.850			0.850	
Flt Protected			0.950		0.950	
Satd. Flow (prot)	1827	1553	1752	1642	1752	1395
Flt Permitted			0.950		0.950	
Satd. Flow (perm)	1827	1507	1740	1642	1745	1395
Right Turn on Red		Yes			Yes	
Satd. Flow (RTOR)		322			61	
Link Speed (mph)	25		25		30	
Link Distance (ft)	370			181	510	
Travel Time (s)	10.1			4.9	11.6	
Confl. Peds. (#/hr)		5	5		2	
Peak Hour Factor	0.85	0.85	0.86	0.86	0.95	0.95
Heavy Vehicles (%)	4%	4%	3%	3%	3%	3%
Parking (#/hr)				2	2	
Adj. Flow (vph)	238	322	33	277	327	61
Shared Lane Traffic (%)						
Lane Group Flow (vph)	238	322	33	277	327	61
Enter Blocked Intersection	No	No	No	No	No	No
Lane Alignment	Left	Right	Left	Left	Left	Right
Median Width(ft)	12			12	12	
Link Offset(ft)	0			0	0	
Crosswalk Width(ft)	16			16	16	
Two way Left Turn Lane	Yes			Yes		
Headway Factor	1.00	1.00	1.00	1.16	1.00	1.16
Turning Speed (mph)		9	15		15	9
Number of Detectors	0	0	1	0	1	1
Detector Template						
Leading Detector (ft)	0	0	20	0	20	20
Trailing Detector (ft)	0	0	0	0	0	0
Detector 1 Position(ft)	0	0	0	0	0	0
Detector 1 Size(ft)	6	20	20	6	20	20
Detector 1 Type	Cl+Ex	Cl+Ex	Cl+Ex	Cl+Ex	Cl+Ex	Cl+Ex
Detector 1 Channel						
Detector 1 Extend (s)	0.0	0.0	0.0	0.0	0.0	0.0
Detector 1 Queue (s)	0.0	0.0	0.0	0.0	0.0	0.0
Detector 1 Delay (s)	0.0	0.0	5.0	0.0	3.0	3.0
Turn Type	NA	Perm	Prot	NA	Prot	Perm
Protected Phases	1		3	1 3	2	
Permitted Phases		1			2	
Detector Phase	1	1	3	1 3	2	2



Lane Group	SET	SER	NWL	NWT	NEL	NER
Switch Phase						
Minimum Initial (s)	4.0	4.0	4.0		4.0	4.0
Minimum Split (s)	20.0	20.0	9.0		20.0	20.0
Total Split (s)	23.0	23.0	14.0		23.0	23.0
Total Split (%)	38.3%	38.3%	23.3%		38.3%	38.3%
Maximum Green (s)	18.0	18.0	9.0		18.0	18.0
Yellow Time (s)	4.5	4.5	4.5		4.5	4.5
All-Red Time (s)	0.5	0.5	0.5		0.5	0.5
Lost Time Adjust (s)	0.0	0.0	0.0		0.0	0.0
Total Lost Time (s)	5.0	5.0	5.0		5.0	5.0
Lead/Lag	Lead	Lead		Lag	Lag	
Lead-Lag Optimize?						
Vehicle Extension (s)	0.2	0.2	3.0		3.0	3.0
Recall Mode	C-Max	C-Max	None		None	None
Walk Time (s)	7.0	7.0			7.0	7.0
Flash Dont Walk (s)	8.0	8.0			8.0	8.0
Pedestrian Calls (#/hr)	0	0			2	2
Act Effct Green (s)	20.8	20.8	8.9	34.7	15.3	15.3
Actuated g/C Ratio	0.35	0.35	0.15	0.58	0.26	0.26
v/c Ratio	0.38	0.44	0.13	0.29	0.73	0.15
Control Delay	20.9	7.4	23.2	8.2	30.6	6.1
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	20.9	7.4	23.2	8.2	30.6	6.1
LOS	C	A	C	A	C	A
Approach Delay	13.1			9.8	26.7	
Approach LOS	B			A	C	

Intersection Summary

Area Type: Other

Cycle Length: 60

Actuated Cycle Length: 60

Offset: 0 (0%), Referenced to phase 1:NWSE, Start of Green

Natural Cycle: 50

Control Type: Actuated-Coordinated

Maximum v/c Ratio: 0.73

Intersection Signal Delay: 16.5

Intersection LOS: B

Intersection Capacity Utilization 45.6%

ICU Level of Service A

Analysis Period (min) 15

Splits and Phases: 1: Baker Rd & Main St





Lane Group	SBL	SBR	SEL	SET	NWT	NWR
Lane Configurations	↑	↑	↑	↑	↔	
Traffic Volume (vph)	73	65	36	458	495	48
Future Volume (vph)	73	65	36	458	495	48
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Storage Length (ft)	0	60	100		0	
Storage Lanes	1	1	1		0	
Taper Length (ft)	25		75			
Lane Util. Factor	1.00	1.00	1.00	1.00	1.00	1.00
Ped Bike Factor	0.93	0.88	0.96		0.99	
Fr _t		0.850			0.988	
Flt Protected	0.950		0.950			
Satd. Flow (prot)	1433	1283	1462	1454	1409	0
Flt Permitted	0.950		0.950			
Satd. Flow (perm)	1329	1128	1410	1454	1409	0
Right Turn on Red		Yes			Yes	
Satd. Flow (RTOR)		82			10	
Link Speed (mph)	25		25	25		
Link Distance (ft)	555		607	235		
Travel Time (s)	15.1			16.6	6.4	
Confl. Peds. (#/hr)	29	41	32		32	
Peak Hour Factor	0.79	0.79	0.81	0.81	0.93	0.93
Heavy Vehicles (%)	2%	2%	0%	0%	1%	1%
Parking (#/hr)	0	0	0	10	10	10
Adj. Flow (vph)	92	82	44	565	532	52
Shared Lane Traffic (%)						
Lane Group Flow (vph)	92	82	44	565	584	0
Enter Blocked Intersection	No	No	No	No	No	No
Lane Alignment	Left	Right	Left	Left	Left	Right
Median Width(ft)	12			12	12	
Link Offset(ft)	0			0	0	
Crosswalk Width(ft)	16			16	16	
Two way Left Turn Lane			Yes			
Headway Factor	1.30	1.30	1.30	1.40	1.40	1.14
Turning Speed (mph)	15	9	15			9
Number of Detectors	1	1	1	0	0	
Detector Template						
Leading Detector (ft)	20	20	20	0	0	
Trailing Detector (ft)	0	0	0	0	0	
Detector 1 Position(ft)	0	0	0	0	0	
Detector 1 Size(ft)	20	20	20	6	6	
Detector 1 Type	Cl+Ex	Cl+Ex	Cl+Ex	Cl+Ex	Cl+Ex	
Detector 1 Channel						
Detector 1 Extend (s)	0.0	0.0	0.0	0.0	0.0	
Detector 1 Queue (s)	0.0	0.0	0.0	0.0	0.0	
Detector 1 Delay (s)	3.0	3.0	3.0	0.0	0.0	
Turn Type	Prot	Perm	Prot	NA	NA	
Protected Phases	2		3	1 3	1	
Permitted Phases		2				
Detector Phase	2	2	3	1 3	1	



Lane Group	SBL	SBR	SEL	SET	NWT	NWR
Switch Phase						
Minimum Initial (s)	7.0	7.0	4.0		10.0	
Minimum Split (s)	15.0	15.0	8.0		17.0	
Total Split (s)	20.0	20.0	10.0		30.0	
Total Split (%)	33.3%	33.3%	16.7%		50.0%	
Maximum Green (s)	15.0	15.0	6.0		25.0	
Yellow Time (s)	4.5	4.5	3.5		4.5	
All-Red Time (s)	0.5	0.5	0.5		0.5	
Lost Time Adjust (s)	0.0	0.0	0.0		0.0	
Total Lost Time (s)	5.0	5.0	4.0		5.0	
Lead/Lag	Lag	Lag		Lead		
Lead-Lag Optimize?						
Vehicle Extension (s)	3.0	3.0	3.0		0.2	
Recall Mode	None	None	None		C-Max	
Walk Time (s)	12.0	12.0			12.0	
Flash Dont Walk (s)	0.0	0.0			0.0	
Pedestrian Calls (#/hr)	21	21			0	
Act Effect Green (s)	9.5	9.5	10.1	43.9	28.8	
Actuated g/C Ratio	0.16	0.16	0.17	0.73	0.48	
v/c Ratio	0.41	0.33	0.18	0.53	0.86	
Control Delay	27.6	9.8	23.9	7.8	36.7	
Queue Delay	0.0	0.0	0.0	0.0	0.0	
Total Delay	27.6	9.8	23.9	7.8	36.7	
LOS	C	A	C	A	D	
Approach Delay	19.2			9.0	36.7	
Approach LOS	B			A	D	

Intersection Summary

Area Type: CBD

Cycle Length: 60

Actuated Cycle Length: 60

Offset: 9 (15%), Referenced to phase 1:NWSE, Start of Green

Natural Cycle: 60

Control Type: Actuated-Coordinated

Maximum v/c Ratio: 0.86

Intersection Signal Delay: 22.1

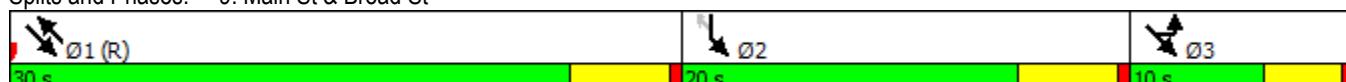
Intersection LOS: C

Intersection Capacity Utilization 50.5%

ICU Level of Service A

Analysis Period (min) 15

Splits and Phases: 9: Main St & Broad St



Intersection

Int Delay, s/veh 4.4

Movement	SEL	SET	SER	NWL	NWT	NWR	NEL	NET	NER	SWL	SWT	SWR
Lane Configurations	↖ ↗	↖ ↗		↖ ↗	↖ ↗		↖ ↗	↖ ↗	↖ ↗	↖ ↗	↖ ↗	↖ ↗
Traffic Vol, veh/h	76	426	31	11	465	56	7	5	17	34	3	60
Future Vol, veh/h	76	426	31	11	465	56	7	5	17	34	3	60
Conflicting Peds, #/hr	6	0	26	26	0	6	0	0	10	10	0	0
Sign Control	Free	Free	Free	Free	Free	Free	Stop	Stop	Stop	Stop	Stop	Stop
RT Channelized	-	-	None									
Storage Length	75	-	-	75	-	-	-	-	-	-	-	-
Veh in Median Storage, #	-	0	-	-	0	-	-	0	-	-	0	-
Grade, %	-	0	-	-	0	-	-	0	-	-	0	-
Peak Hour Factor	82	82	82	95	95	95	61	61	61	90	90	90
Heavy Vehicles, %	1	1	1	1	1	1	0	0	0	1	1	1
Mvmt Flow	93	520	38	12	489	59	11	8	28	38	3	67

Major/Minor	Major1			Major2			Minor1			Minor2		
Conflicting Flow All	554	0	0	583	0	0	1327	1328	574	1300	1317	525
Stage 1	-	-	-	-	-	-	750	750	-	548	548	-
Stage 2	-	-	-	-	-	-	577	578	-	752	769	-
Critical Hdwy	4.11	-	-	4.11	-	-	7.1	6.5	6.2	7.11	6.51	6.21
Critical Hdwy Stg 1	-	-	-	-	-	-	6.1	5.5	-	6.11	5.51	-
Critical Hdwy Stg 2	-	-	-	-	-	-	6.1	5.5	-	6.11	5.51	-
Follow-up Hdwy	2.209	-	-	2.209	-	-	3.5	4	3.3	3.509	4.009	3.309
Pot Cap-1 Maneuver	1021	-	-	996	-	-	134	157	522	139	158	554
Stage 1	-	-	-	-	-	-	407	422	-	522	519	-
Stage 2	-	-	-	-	-	-	506	504	-	404	412	-
Platoon blocked, %	-	-	-	-	-	-						
Mov Cap-1 Maneuver	1021	-	-	987	-	-	104	137	504	114	138	551
Mov Cap-2 Maneuver	-	-	-	-	-	-	104	137	-	114	138	-
Stage 1	-	-	-	-	-	-	361	374	-	472	510	-
Stage 2	-	-	-	-	-	-	436	495	-	336	365	-

Approach	SE			NW			NE			SW		
HCM Control Delay, s	1.3			0.2			27			34.7		
HCM LOS							D			D		
Minor Lane/Major Mvmt	NELn1	NWL	NWT	NWR	SEL	SET	SERSWLn1					
Capacity (veh/h)	211	987	-	-	1021	-	-	226				
HCM Lane V/C Ratio	0.225	0.012	-	-	0.091	-	-	0.477				
HCM Control Delay (s)	27	8.7	-	-	8.9	-	-	34.7				
HCM Lane LOS	D	A	-	-	A	-	-	D				
HCM 95th %tile Q(veh)	0.8	0	-	-	0.3	-	-	2.4				

Lanes, Volumes, Timings

1: Baker Rd & Main St

08/02/2017



Lane Group	SET	SER	NWL	NWT	NEL	NER
Lane Configurations	↑	↑	↑	↑	↑	↑
Traffic Volume (vph)	281	253	53	459	379	227
Future Volume (vph)	281	253	53	459	379	227
Ideal Flow (vphpl)	1900	1900	1350	1350	1900	1900
Storage Length (ft)		100	65		150	0
Storage Lanes		1	1		1	1
Taper Length (ft)			75		75	
Lane Util. Factor	1.00	1.00	1.00	1.00	1.00	1.00
Ped Bike Factor		0.95	0.98		1.00	0.98
Fr _t		0.850			0.850	
Flt Protected			0.950		0.950	
Satd. Flow (prot)	1881	1599	1270	1170	1787	1399
Flt Permitted			0.950		0.950	
Satd. Flow (perm)	1881	1514	1242	1170	1784	1368
Right Turn on Red		Yes			Yes	
Satd. Flow (RTOR)		291			244	
Link Speed (mph)	25			25	30	
Link Distance (ft)	370			181	510	
Travel Time (s)	10.1			4.9	11.6	
Confl. Peds. (#/hr)		17	17		1	1
Peak Hour Factor	0.87	0.87	0.95	0.95	0.93	0.93
Heavy Vehicles (%)	1%	1%	1%	1%	1%	1%
Parking (#/hr)				5		5
Adj. Flow (vph)	323	291	56	483	408	244
Shared Lane Traffic (%)						
Lane Group Flow (vph)	323	291	56	483	408	244
Enter Blocked Intersection	No	No	No	No	No	No
Lane Alignment	Left	Right	Left	Left	Left	Right
Median Width(ft)	12			12	12	
Link Offset(ft)	0			0	0	
Crosswalk Width(ft)	16			16	16	
Two way Left Turn Lane	Yes					
Headway Factor	1.00	1.00	1.53	1.79	*0.10	*0.10
Turning Speed (mph)		9	15		15	9
Number of Detectors	0	0	1	0	1	1
Detector Template						
Leading Detector (ft)	0	0	20	0	20	20
Trailing Detector (ft)	0	0	0	0	0	0
Detector 1 Position(ft)	0	0	0	0	0	0
Detector 1 Size(ft)	20	20	20	6	20	20
Detector 1 Type	Cl+Ex	Cl+Ex	Cl+Ex	Cl+Ex	Cl+Ex	Cl+Ex
Detector 1 Channel						
Detector 1 Extend (s)	0.0	0.0	0.0	0.0	0.0	0.0
Detector 1 Queue (s)	0.0	0.0	0.0	0.0	0.0	0.0
Detector 1 Delay (s)	0.0	0.0	5.0	0.0	3.0	3.0
Turn Type	NA	Perm	Prot	NA	Prot	Perm
Protected Phases	1		3	1 3	2	
Permitted Phases		1			2	
Detector Phase	1	1	3	1 3	2	2



Lane Group	SET	SER	NWL	NWT	NEL	NER
Switch Phase						
Minimum Initial (s)	4.0	4.0	4.0		4.0	4.0
Minimum Split (s)	20.0	20.0	9.0		20.0	20.0
Total Split (s)	25.0	25.0	11.0		24.0	24.0
Total Split (%)	41.7%	41.7%	18.3%		40.0%	40.0%
Maximum Green (s)	20.0	20.0	6.0		19.0	19.0
Yellow Time (s)	4.5	4.5	4.5		4.5	4.5
All-Red Time (s)	0.5	0.5	0.5		0.5	0.5
Lost Time Adjust (s)	0.0	0.0	0.0		0.0	0.0
Total Lost Time (s)	5.0	5.0	5.0		5.0	5.0
Lead/Lag	Lead	Lead		Lag	Lag	
Lead-Lag Optimize?						
Vehicle Extension (s)	0.2	0.2	3.0		3.0	3.0
Recall Mode	Max	Max	None		None	None
Walk Time (s)	7.0	7.0			7.0	7.0
Flash Dont Walk (s)	8.0	8.0			8.0	8.0
Pedestrian Calls (#/hr)	0	0			1	1
Act Effct Green (s)	20.1	20.1	6.0	31.1	16.7	16.7
Actuated g/C Ratio	0.35	0.35	0.10	0.54	0.29	0.29
v/c Ratio	0.50	0.41	0.42	0.77	0.79	0.43
Control Delay	18.8	4.2	36.1	22.5	31.7	5.2
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	18.8	4.2	36.1	22.5	31.7	5.2
LOS	B	A	D	C	C	A
Approach Delay	11.9			23.9	21.8	
Approach LOS	B			C	C	

Intersection Summary

Area Type: Other

Cycle Length: 60

Actuated Cycle Length: 57.8

Natural Cycle: 60

Control Type: Semi Act-Uncoord

Maximum v/c Ratio: 0.79

Intersection Signal Delay: 19.1

Intersection LOS: B

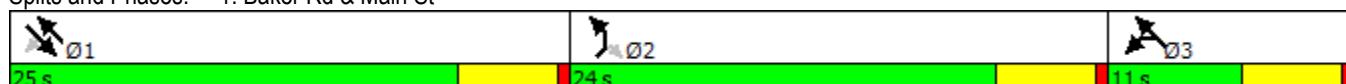
Intersection Capacity Utilization 63.3%

ICU Level of Service B

Analysis Period (min) 15

* User Entered Value

Splits and Phases: 1: Baker Rd & Main St





Lane Group	SBL	SBR	SEL	SET	NWT	NWR
Lane Configurations	↑	↑	↑	↑	↔	
Traffic Volume (vph)	72	139	60	564	930	25
Future Volume (vph)	72	139	60	564	930	25
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Storage Length (ft)	0	60	200		0	
Storage Lanes	1	1	1		0	
Taper Length (ft)	25		75			
Lane Util. Factor	1.00	1.00	1.00	1.00	1.00	1.00
Ped Bike Factor		0.80	0.95		0.99	
Fr _t		0.850			0.996	
Flt Protected	0.950		0.950			
Satd. Flow (prot)	1462	1308	1462	1368	1341	0
Flt Permitted	0.950		0.950			
Satd. Flow (perm)	1462	1042	1386	1368	1341	0
Right Turn on Red		Yes			Yes	
Satd. Flow (RTOR)		174			3	
Link Speed (mph)	25		25	25		
Link Distance (ft)	555		607	235		
Travel Time (s)	15.1			16.6	6.4	
Confl. Peds. (#/hr)		50	59		59	
Peak Hour Factor	0.80	0.80	0.85	0.85	0.92	0.92
Heavy Vehicles (%)	0%	0%	0%	0%	1%	1%
Parking (#/hr)	0	0	0	20	20	20
Adj. Flow (vph)	90	174	71	664	1011	27
Shared Lane Traffic (%)						
Lane Group Flow (vph)	90	174	71	664	1038	0
Enter Blocked Intersection	No	No	No	No	No	No
Lane Alignment	Left	Right	Left	Left	Left	Right
Median Width(ft)	12			12	12	
Link Offset(ft)	0			0	0	
Crosswalk Width(ft)	16			16	16	
Two way Left Turn Lane			Yes			
Headway Factor	*0.10	*0.10	1.30	1.51	1.51	1.14
Turning Speed (mph)	15	9	15			9
Number of Detectors	1	1	1	0	0	
Detector Template						
Leading Detector (ft)	20	20	20	0	0	
Trailing Detector (ft)	0	0	0	0	0	
Detector 1 Position(ft)	0	0	0	0	0	
Detector 1 Size(ft)	20	20	20	6	6	
Detector 1 Type	Cl+Ex	Cl+Ex	Cl+Ex	Cl+Ex	Cl+Ex	
Detector 1 Channel						
Detector 1 Extend (s)	0.0	0.0	0.0	0.0	0.0	
Detector 1 Queue (s)	0.0	0.0	0.0	0.0	0.0	
Detector 1 Delay (s)	3.0	3.0	3.0	0.0	0.0	
Turn Type	Prot	Perm	Prot	NA	NA	
Protected Phases	2		3	1 3	1	
Permitted Phases		2				
Detector Phase	2	2	3	1 3	1	



Lane Group	SBL	SBR	SEL	SET	NWT	NWR
Switch Phase						
Minimum Initial (s)	7.0	7.0	4.0		10.0	
Minimum Split (s)	15.0	15.0	8.0		17.0	
Total Split (s)	15.0	15.0	10.0		65.0	
Total Split (%)	16.7%	16.7%	11.1%		72.2%	
Maximum Green (s)	10.0	10.0	6.0		60.0	
Yellow Time (s)	4.5	4.5	3.5		4.5	
All-Red Time (s)	0.5	0.5	0.5		0.5	
Lost Time Adjust (s)	0.0	0.0	0.0		0.0	
Total Lost Time (s)	5.0	5.0	4.0		5.0	
Lead/Lag	Lag	Lag		Lead		
Lead-Lag Optimize?						
Vehicle Extension (s)	3.0	3.0	3.0		0.2	
Recall Mode	None	None	None		Max	
Walk Time (s)	12.0	12.0			12.0	
Flash Dont Walk (s)	0.0	0.0			0.0	
Pedestrian Calls (#/hr)	25	25			0	
Act Effct Green (s)	10.0	10.0	6.0	70.6	60.6	
Actuated g/C Ratio	0.11	0.11	0.07	0.78	0.67	
v/c Ratio	0.56	0.65	0.74	0.62	1.16	
Control Delay	51.8	18.1	83.7	7.8	101.8	
Queue Delay	0.0	0.0	0.0	0.0	0.0	
Total Delay	51.8	18.1	83.7	7.8	101.9	
LOS	D	B	F	A	F	
Approach Delay	29.5			15.1	101.9	
Approach LOS	C			B	F	

Intersection Summary

Area Type: CBD

Cycle Length: 90

Actuated Cycle Length: 90.6

Natural Cycle: 120

Control Type: Semi Act-Uncoord

Maximum v/c Ratio: 1.16

Intersection Signal Delay: 61.2

Intersection LOS: E

Intersection Capacity Utilization 78.0%

ICU Level of Service D

Analysis Period (min) 15

* User Entered Value

Splits and Phases: 9: Main St & Broad St



Intersection															
Int Delay, s/veh	7.8														
Movement	SEL	SET	SER	NWL	NWT	NWR	NEL	NET	NER	SWL	SWT	SWR			
Lane Configurations	↑	↑		↑	↑		↓	↓		↑	↑				
Traffic Vol, veh/h	90	481	22	9	808	30	4	3	38	24	2	59			
Future Vol, veh/h	90	481	22	9	808	30	4	3	38	24	2	59			
Conflicting Peds, #/hr	19	0	41	41	0	19	0	0	33	33	0	0			
Sign Control	Free	Free	Free	Free	Free	Free	Stop	Stop	Stop	Stop	Stop	Stop			
RT Channelized	-	-	None	-	-	None	-	-	None	-	-	None			
Storage Length	75	-	-	75	-	-	-	-	-	-	-	-			
Veh in Median Storage, #	-	0	-	-	0	-	-	0	-	-	0	-			
Grade, %	-	0	-	-	0	-	-	0	-	-	0	-			
Peak Hour Factor	89	89	89	95	95	95	75	75	75	82	82	82			
Heavy Vehicles, %	1	1	1	1	1	1	0	0	0	1	1	1			
Mvmt Flow	101	540	25	9	851	32	5	4	51	29	2	72			
Major/Minor	Major1			Major2			Minor1			Minor2					
Conflicting Flow All	901	0	0	606	0	0	1718	1716	627	1719	1712	885			
Stage 1	-	-	-	-	-	-	796	796	-	904	904	-			
Stage 2	-	-	-	-	-	-	922	920	-	815	808	-			
Critical Hdwy	4.11	-	-	4.11	-	-	7.1	6.5	6.2	7.11	6.51	6.21			
Critical Hdwy Stg 1	-	-	-	-	-	-	6.1	5.5	-	6.11	5.51	-			
Critical Hdwy Stg 2	-	-	-	-	-	-	6.1	5.5	-	6.11	5.51	-			
Follow-up Hdwy	2.209	-	-	2.209	-	-	3.5	4	3.3	3.509	4.009	3.309			
Pot Cap-1 Maneuver	758	-	-	977	-	-	71	91	487	71	91	345			
Stage 1	-	-	-	-	-	-	383	402	-	333	357	-			
Stage 2	-	-	-	-	-	-	327	352	-	373	395	-			
Platoon blocked, %	-	-	-	-	-	-	-	-	-	-	-	-			
Mov Cap-1 Maneuver	758	-	-	946	-	-	47	74	453	51	74	339			
Mov Cap-2 Maneuver	-	-	-	-	-	-	47	74	-	51	74	-			
Stage 1	-	-	-	-	-	-	319	335	-	283	347	-			
Stage 2	-	-	-	-	-	-	253	342	-	275	329	-			
Approach	SE			NW			NE			SW					
HCM Control Delay, s	1.6			0.1			28.1			102.1					
HCM LOS							D			F					
Minor Lane/Major Mvmt	NELn1	NWL	NWT	NWR	SEL	SET	SERSWLn1								
Capacity (veh/h)	215	946	-	-	758	-	-	127							
HCM Lane V/C Ratio	0.279	0.01	-	-	0.133	-	-	0.816							
HCM Control Delay (s)	28.1	8.8	-	-	10.5	-	-	102.1							
HCM Lane LOS	D	A	-	-	B	-	-	F							
HCM 95th %tile Q(veh)	1.1	0	-	-	0.5	-	-	4.9							

SYNCHRO HCM LOS REPORTS

ALTERNATIVE ONE – SIGNAL OPTIMIZATION

Lanes, Volumes, Timings
1: Baker Rd & Main St

08/02/2017



Lane Group	SET	SER	NWL	NWT	NEL	NER
Lane Configurations	↑	↑	↑	↑	↑	↑
Traffic Volume (vph)	406	571	123	151	231	71
Future Volume (vph)	406	571	123	151	231	71
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Storage Length (ft)		100	65		150	0
Storage Lanes		1	1		1	1
Taper Length (ft)			75		75	
Lane Util. Factor	1.00	1.00	1.00	1.00	1.00	1.00
Ped Bike Factor		0.95	0.99		1.00	0.98
Fr _t		0.850			0.850	
Flt Protected			0.950		0.950	
Satd. Flow (prot)	1863	1583	1719	1583	1736	1359
Flt Permitted			0.410		0.950	
Satd. Flow (perm)	1863	1499	731	1583	1728	1326
Right Turn on Red		Yes			Yes	
Satd. Flow (RTOR)		543			101	
Link Speed (mph)	25			25	30	
Link Distance (ft)	370			181	510	
Travel Time (s)	10.1			4.9	11.6	
Confl. Peds. (#/hr)		17	17		2	2
Peak Hour Factor	0.95	0.95	0.76	0.76	0.70	0.70
Heavy Vehicles (%)	2%	2%	5%	5%	4%	4%
Parking (#/hr)				5	5	
Adj. Flow (vph)	427	601	162	199	330	101
Shared Lane Traffic (%)						
Lane Group Flow (vph)	427	601	162	199	330	101
Enter Blocked Intersection	No	No	No	No	No	No
Lane Alignment	Left	Right	Left	Left	Left	Right
Median Width(ft)	12			12	12	
Link Offset(ft)	0			0	0	
Crosswalk Width(ft)	16			16	16	
Two way Left Turn Lane	Yes			Yes		
Headway Factor	1.00	1.00	1.00	1.19	1.00	1.19
Turning Speed (mph)		9	15		15	9
Number of Detectors	0	0	1	0	1	1
Detector Template						
Leading Detector (ft)	0	0	20	0	20	20
Trailing Detector (ft)	0	0	0	0	0	0
Detector 1 Position(ft)	0	0	0	0	0	0
Detector 1 Size(ft)	6	20	20	6	20	20
Detector 1 Type	Call	Call	Cl+Ex	Call	Cl+Ex	Cl+Ex
Detector 1 Channel						
Detector 1 Extend (s)	0.0	0.0	0.0	0.0	0.0	0.0
Detector 1 Queue (s)	0.0	0.0	0.0	0.0	0.0	0.0
Detector 1 Delay (s)	0.0	0.0	5.0	0.0	3.0	3.0
Turn Type	NA	Perm	D.P+P	NA	Prot	Perm
Protected Phases	1		3	1 3	2	
Permitted Phases		1	1		2	
Detector Phase	1	1	3	1 3	2	2



Lane Group	SET	SER	NWL	NWT	NEL	NER
Switch Phase						
Minimum Initial (s)	10.0	10.0	5.0		7.0	7.0
Minimum Split (s)	26.0	26.0	12.0		19.0	19.0
Total Split (s)	39.0	39.0	12.0		29.0	29.0
Total Split (%)	48.8%	48.8%	15.0%		36.3%	36.3%
Maximum Green (s)	33.3	33.3	6.3		23.6	23.6
Yellow Time (s)	3.0	3.0	3.0		3.2	3.2
All-Red Time (s)	2.7	2.7	2.7		2.2	2.2
Lost Time Adjust (s)	0.0	0.0	0.0		0.0	0.0
Total Lost Time (s)	5.7	5.7	5.7		5.4	5.4
Lead/Lag	Lead	Lead			Lag	Lag
Lead-Lag Optimize?						
Vehicle Extension (s)	0.2	0.2	3.0		3.0	3.0
Recall Mode	C-Max	C-Max	None		None	None
Walk Time (s)	7.0	7.0			7.0	7.0
Flash Dont Walk (s)	13.0	13.0			12.0	12.0
Pedestrian Calls (#/hr)	0	0			2	2
Act Effct Green (s)	37.4	37.4	43.7	49.4	19.5	19.5
Actuated g/C Ratio	0.47	0.47	0.55	0.62	0.24	0.24
v/c Ratio	0.49	0.61	0.34	0.20	0.78	0.25
Control Delay	13.7	2.7	9.7	8.2	41.0	6.6
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	13.7	2.7	9.7	8.2	41.0	6.6
LOS	B	A	A	A	D	A
Approach Delay	7.3				8.9	33.0
Approach LOS	A				A	C

Intersection Summary

Area Type: Other

Cycle Length: 80

Actuated Cycle Length: 80

Offset: 0 (0%), Referenced to phase 1:NWSE, Start of Green, Master Intersection

Natural Cycle: 60

Control Type: Actuated-Coordinated

Maximum v/c Ratio: 0.78

Intersection Signal Delay: 13.7

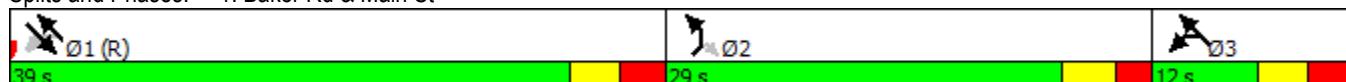
Intersection LOS: B

Intersection Capacity Utilization 55.2%

ICU Level of Service B

Analysis Period (min) 15

Splits and Phases: 1: Baker Rd & Main St





Lane Group	SBL	SBR	SEL	SET	NWT	NWR
Lane Configurations	↑	↑	↑	↑	↔	
Traffic Volume (vph)	141	151	15	878	308	43
Future Volume (vph)	141	151	15	878	308	43
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Storage Length (ft)	0	60	100		0	
Storage Lanes	1	1	1		0	
Taper Length (ft)	25		75			
Lane Util. Factor	1.00	1.00	1.00	1.00	1.00	1.00
Ped Bike Factor	0.97	0.94	0.98		0.99	
Fr _t		0.850			0.983	
Flt Protected	0.950		0.950			
Satd. Flow (prot)	1392	1246	1433	1341	1308	0
Flt Permitted	0.950		0.461			
Satd. Flow (perm)	1354	1172	681	1341	1308	0
Right Turn on Red		Yes			Yes	
Satd. Flow (RTOR)		190			14	
Link Speed (mph)	25			25	25	
Link Distance (ft)	555			607	235	
Travel Time (s)	15.1			16.6	6.4	
Confl. Peds. (#/hr)	11	16	19		19	
Peak Hour Factor	0.79	0.79	0.95	0.95	0.83	0.83
Heavy Vehicles (%)	5%	5%	2%	2%	2%	2%
Parking (#/hr)	0	0	0	20	20	20
Adj. Flow (vph)	178	191	16	924	371	52
Shared Lane Traffic (%)						
Lane Group Flow (vph)	178	191	16	924	423	0
Enter Blocked Intersection	No	No	No	No	No	No
Lane Alignment	Left	Right	Left	Left	Left	Right
Median Width(ft)	12			12	12	
Link Offset(ft)	0			0	0	
Crosswalk Width(ft)	16			16	16	
Two way Left Turn Lane			Yes			
Headway Factor	1.30	1.30	1.30	1.51	1.51	1.14
Turning Speed (mph)	15	9	15			9
Number of Detectors	1	1	1	0	0	
Detector Template						
Leading Detector (ft)	20	20	20	0	0	
Trailing Detector (ft)	0	0	0	0	0	
Detector 1 Position(ft)	0	0	0	0	0	
Detector 1 Size(ft)	20	20	20	6	6	
Detector 1 Type	Cl+Ex	Cl+Ex	Cl+Ex	Call	Call	
Detector 1 Channel						
Detector 1 Extend (s)	0.0	0.0	0.0	0.0	0.0	
Detector 1 Queue (s)	0.0	0.0	0.0	0.0	0.0	
Detector 1 Delay (s)	3.0	3.0	3.0	0.0	0.0	
Turn Type	Prot	Perm	D.P+P	NA	NA	
Protected Phases	2		3	1 3	1	
Permitted Phases		2	1			
Detector Phase	2	2	3	1 3	1	



Lane Group	SBL	SBR	SEL	SET	NWT	NWR
Switch Phase						
Minimum Initial (s)	7.0	7.0	5.0		10.0	
Minimum Split (s)	16.0	16.0	13.0		25.0	
Total Split (s)	17.0	17.0	13.0		50.0	
Total Split (%)	21.3%	21.3%	16.3%		62.5%	
Maximum Green (s)	11.0	11.0	6.3		43.3	
Yellow Time (s)	3.0	3.0	3.0		3.0	
All-Red Time (s)	3.0	3.0	3.7		3.7	
Lost Time Adjust (s)	0.0	0.0	0.0		0.0	
Total Lost Time (s)	6.0	6.0	6.7		6.7	
Lead/Lag	Lag	Lag		Lead		
Lead-Lag Optimize?						
Vehicle Extension (s)	3.0	3.0	3.0		0.2	
Recall Mode	None	None	None		C-Max	
Walk Time (s)	7.0	7.0			7.0	
Flash Dont Walk (s)	9.0	9.0			11.0	
Pedestrian Calls (#/hr)	8	8			0	
Act Effct Green (s)	11.0	11.0	49.6	56.3	43.3	
Actuated g/C Ratio	0.14	0.14	0.62	0.70	0.54	
v/c Ratio	0.93	0.59	0.03	0.98	0.59	
Control Delay	87.2	13.5	4.0	38.8	12.2	
Queue Delay	0.0	0.0	0.0	0.0	0.0	
Total Delay	87.2	13.5	4.0	38.8	12.2	
LOS	F	B	A	D	B	
Approach Delay	49.1			38.2	12.2	
Approach LOS	D			D	B	

Intersection Summary

Area Type: CBD

Cycle Length: 80

Actuated Cycle Length: 80

Offset: 60 (75%), Referenced to phase 1:NWSE, Start of Green

Natural Cycle: 90

Control Type: Actuated-Coordinated

Maximum v/c Ratio: 0.98

Intersection Signal Delay: 34.2

Intersection LOS: C

Intersection Capacity Utilization 72.5%

ICU Level of Service C

Analysis Period (min) 15

Splits and Phases: 9: Main St & Broad St



Lanes, Volumes, Timings

1: Baker Rd & Main St

08/03/2017



Lane Group	SET	SER	NWL	NWT	NEL	NER
Lane Configurations	↑	↑	↑	↑	↑	↑
Traffic Volume (vph)	202	274	28	238	311	58
Future Volume (vph)	202	274	28	238	311	58
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Storage Length (ft)		100	65		150	0
Storage Lanes		1	1		1	1
Taper Length (ft)			75		75	
Lane Util. Factor	1.00	1.00	1.00	1.00	1.00	1.00
Ped Bike Factor		0.97	0.99		1.00	
Fr _t		0.850			0.850	
Flt Protected			0.950		0.950	
Satd. Flow (prot)	1827	1553	1752	1642	1752	1395
Flt Permitted			0.589		0.950	
Satd. Flow (perm)	1827	1509	1080	1642	1746	1395
Right Turn on Red		Yes			Yes	
Satd. Flow (RTOR)		322			61	
Link Speed (mph)	25			25	30	
Link Distance (ft)	370			181	510	
Travel Time (s)	10.1			4.9	11.6	
Confl. Peds. (#/hr)		5	5		2	
Peak Hour Factor	0.85	0.85	0.86	0.86	0.95	0.95
Heavy Vehicles (%)	4%	4%	3%	3%	3%	3%
Parking (#/hr)				2	2	
Adj. Flow (vph)	238	322	33	277	327	61
Shared Lane Traffic (%)						
Lane Group Flow (vph)	238	322	33	277	327	61
Enter Blocked Intersection	No	No	No	No	No	No
Lane Alignment	Left	Right	Left	Left	Left	Right
Median Width(ft)	12			12	12	
Link Offset(ft)	0			0	0	
Crosswalk Width(ft)	16			16	16	
Two way Left Turn Lane	Yes			Yes		
Headway Factor	1.00	1.00	1.00	1.16	1.00	1.16
Turning Speed (mph)		9	15		15	9
Number of Detectors	0	0	1	0	1	1
Detector Template						
Leading Detector (ft)	0	0	20	0	20	20
Trailing Detector (ft)	0	0	0	0	0	0
Detector 1 Position(ft)	0	0	0	0	0	0
Detector 1 Size(ft)	6	20	20	6	20	20
Detector 1 Type	Cl+Ex	Cl+Ex	Cl+Ex	Cl+Ex	Cl+Ex	Cl+Ex
Detector 1 Channel						
Detector 1 Extend (s)	0.0	0.0	0.0	0.0	0.0	0.0
Detector 1 Queue (s)	0.0	0.0	0.0	0.0	0.0	0.0
Detector 1 Delay (s)	0.0	0.0	5.0	0.0	3.0	3.0
Turn Type	NA	Perm	D.P+P	NA	Prot	Perm
Protected Phases	1		3	1 3	2	
Permitted Phases		1	1		2	
Detector Phase	1	1	3	1 3	2	2



Lane Group	SET	SER	NWL	NWT	NEL	NER
Switch Phase						
Minimum Initial (s)	10.0	10.0	5.0		7.0	7.0
Minimum Split (s)	26.0	26.0	12.0		19.0	19.0
Total Split (s)	29.0	29.0	12.0		29.0	29.0
Total Split (%)	41.4%	41.4%	17.1%		41.4%	41.4%
Maximum Green (s)	23.3	23.3	6.3		23.6	23.6
Yellow Time (s)	3.0	3.0	3.0		3.2	3.2
All-Red Time (s)	2.7	2.7	2.7		2.2	2.2
Lost Time Adjust (s)	0.0	0.0	0.0		0.0	0.0
Total Lost Time (s)	5.7	5.7	5.7		5.4	5.4
Lead/Lag	Lead	Lead			Lag	Lag
Lead-Lag Optimize?						
Vehicle Extension (s)	0.2	0.2	3.0		3.0	3.0
Recall Mode	C-Max	C-Max	None		None	None
Walk Time (s)	7.0	7.0			7.0	7.0
Flash Dont Walk (s)	13.0	13.0			12.0	12.0
Pedestrian Calls (#/hr)	0	0			2	2
Act Effct Green (s)	26.5	26.5	35.2	40.9	18.0	18.0
Actuated g/C Ratio	0.38	0.38	0.50	0.58	0.26	0.26
v/c Ratio	0.34	0.42	0.05	0.29	0.73	0.15
Control Delay	15.7	3.7	8.2	9.4	32.9	6.1
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	15.7	3.7	8.2	9.4	32.9	6.1
LOS	B	A	A	A	C	A
Approach Delay	8.8				9.3	28.7
Approach LOS	A				A	C

Intersection Summary

Area Type: Other

Cycle Length: 70

Actuated Cycle Length: 70

Offset: 0 (0%), Referenced to phase 1:NWSE, Start of Green, Master Intersection

Natural Cycle: 60

Control Type: Actuated-Coordinated

Maximum v/c Ratio: 0.73

Intersection Signal Delay: 15.1

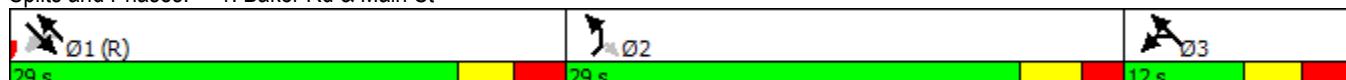
Intersection LOS: B

Intersection Capacity Utilization 49.7%

ICU Level of Service A

Analysis Period (min) 15

Splits and Phases: 1: Baker Rd & Main St





Lane Group	SBL	SBR	SEL	SET	NWT	NWR
Lane Configurations	↑	↑	↑	↑	↑	
Traffic Volume (vph)	73	65	36	458	495	48
Future Volume (vph)	73	65	36	458	495	48
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Storage Length (ft)	0	60	100		0	
Storage Lanes	1	1	1		0	
Taper Length (ft)	25		75			
Lane Util. Factor	1.00	1.00	1.00	1.00	1.00	1.00
Ped Bike Factor	0.94	0.89	0.98		0.99	
Fr _t		0.850			0.988	
Flt Protected	0.950		0.950			
Satd. Flow (prot)	1433	1283	1462	1454	1412	0
Flt Permitted	0.950		0.325			
Satd. Flow (perm)	1342	1144	490	1454	1412	0
Right Turn on Red		Yes			Yes	
Satd. Flow (RTOR)		82			10	
Link Speed (mph)	25		25	25		
Link Distance (ft)	555		607	235		
Travel Time (s)	15.1			16.6	6.4	
Confl. Peds. (#/hr)	29	41	32		32	
Peak Hour Factor	0.79	0.79	0.81	0.81	0.93	0.93
Heavy Vehicles (%)	2%	2%	0%	0%	1%	1%
Parking (#/hr)	0	0	0	10	10	10
Adj. Flow (vph)	92	82	44	565	532	52
Shared Lane Traffic (%)						
Lane Group Flow (vph)	92	82	44	565	584	0
Enter Blocked Intersection	No	No	No	No	No	No
Lane Alignment	Left	Right	Left	Left	Left	Right
Median Width(ft)	12			12	12	
Link Offset(ft)	0			0	0	
Crosswalk Width(ft)	16			16	16	
Two way Left Turn Lane			Yes			
Headway Factor	1.30	1.30	1.30	1.40	1.40	1.14
Turning Speed (mph)	15	9	15			9
Number of Detectors	1	1	1	0	0	
Detector Template						
Leading Detector (ft)	20	20	20	0	0	
Trailing Detector (ft)	0	0	0	0	0	
Detector 1 Position(ft)	0	0	0	0	0	
Detector 1 Size(ft)	20	20	20	6	6	
Detector 1 Type	Cl+Ex	Cl+Ex	Cl+Ex	Cl+Ex	Cl+Ex	
Detector 1 Channel						
Detector 1 Extend (s)	0.0	0.0	0.0	0.0	0.0	
Detector 1 Queue (s)	0.0	0.0	0.0	0.0	0.0	
Detector 1 Delay (s)	3.0	3.0	3.0	0.0	0.0	
Turn Type	Prot	Perm	D.P+P	NA	NA	
Protected Phases	2		3	1 3	1	
Permitted Phases		2	1			
Detector Phase	2	2	3	1 3	1	



Lane Group	SBL	SBR	SEL	SET	NWT	NWR
Switch Phase						
Minimum Initial (s)	7.0	7.0	5.0		10.0	
Minimum Split (s)	16.0	16.0	13.0		25.0	
Total Split (s)	16.0	16.0	13.0		41.0	
Total Split (%)	22.9%	22.9%	18.6%		58.6%	
Maximum Green (s)	10.0	10.0	6.3		34.3	
Yellow Time (s)	3.0	3.0	3.0		3.0	
All-Red Time (s)	3.0	3.0	3.7		3.7	
Lost Time Adjust (s)	0.0	0.0	0.0		0.0	
Total Lost Time (s)	6.0	6.0	6.7		6.7	
Lead/Lag	Lag	Lag		Lead		
Lead-Lag Optimize?						
Vehicle Extension (s)	3.0	3.0	3.0		0.2	
Recall Mode	None	None	None		C-Max	
Walk Time (s)	7.0	7.0			7.0	
Flash Dont Walk (s)	9.0	9.0			11.0	
Pedestrian Calls (#/hr)	21	21			0	
Act Effect Green (s)	9.0	9.0	44.2	52.3	37.3	
Actuated g/C Ratio	0.13	0.13	0.63	0.75	0.53	
v/c Ratio	0.50	0.38	0.11	0.52	0.77	
Control Delay	38.1	12.7	4.8	7.5	19.6	
Queue Delay	0.0	0.0	0.0	0.0	0.0	
Total Delay	38.1	12.7	4.8	7.5	19.6	
LOS	D	B	A	A	B	
Approach Delay	26.2			7.3	19.6	
Approach LOS	C			A	B	

Intersection Summary

Area Type: CBD

Cycle Length: 70

Actuated Cycle Length: 70

Offset: 52 (74%), Referenced to phase 1:NWSE, Start of Green

Natural Cycle: 65

Control Type: Actuated-Coordinated

Maximum v/c Ratio: 0.77

Intersection Signal Delay: 15.0

Intersection LOS: B

Intersection Capacity Utilization 55.2%

ICU Level of Service B

Analysis Period (min) 15

Splits and Phases: 9: Main St & Broad St



Lanes, Volumes, Timings
1: Baker Rd & Main St

08/03/2017



Lane Group	SET	SER	NWL	NWT	NEL	NER
Lane Configurations	↑	↑	↑	↑	↑	↑
Traffic Volume (vph)	281	253	53	459	379	227
Future Volume (vph)	281	253	53	459	379	227
Ideal Flow (vphpl)	1900	1900	1350	1350	1900	1900
Storage Length (ft)		100	65		150	0
Storage Lanes		1	1		1	1
Taper Length (ft)			75		75	
Lane Util. Factor	1.00	1.00	1.00	1.00	1.00	1.00
Ped Bike Factor		0.93	0.98		1.00	0.98
Fr _t		0.850			0.850	
Flt Protected			0.950		0.950	
Satd. Flow (prot)	1881	1599	1270	1170	1787	1399
Flt Permitted			0.458		0.950	
Satd. Flow (perm)	1881	1487	597	1170	1781	1367
Right Turn on Red		Yes			Yes	
Satd. Flow (RTOR)		226			244	
Link Speed (mph)	25			25	30	
Link Distance (ft)	370			181	510	
Travel Time (s)	10.1			4.9	11.6	
Confl. Peds. (#/hr)		17	17		1	1
Peak Hour Factor	0.87	0.87	0.95	0.95	0.93	0.93
Heavy Vehicles (%)	1%	1%	1%	1%	1%	1%
Parking (#/hr)				5		5
Adj. Flow (vph)	323	291	56	483	408	244
Shared Lane Traffic (%)						
Lane Group Flow (vph)	323	291	56	483	408	244
Enter Blocked Intersection	No	No	No	No	No	No
Lane Alignment	Left	Right	Left	Left	Left	Right
Median Width(ft)	12			12	12	
Link Offset(ft)	0			0	0	
Crosswalk Width(ft)	16			16	16	
Two way Left Turn Lane	Yes			Yes		
Headway Factor	1.00	1.00	1.53	1.79	*0.10	*0.10
Turning Speed (mph)		9	15		15	9
Number of Detectors	0	0	1	0	1	1
Detector Template						
Leading Detector (ft)	0	0	20	0	20	20
Trailing Detector (ft)	0	0	0	0	0	0
Detector 1 Position(ft)	0	0	0	0	0	0
Detector 1 Size(ft)	20	20	20	6	20	20
Detector 1 Type	Cl+Ex	Cl+Ex	Cl+Ex	Cl+Ex	Cl+Ex	Cl+Ex
Detector 1 Channel						
Detector 1 Extend (s)	0.0	0.0	0.0	0.0	0.0	0.0
Detector 1 Queue (s)	0.0	0.0	0.0	0.0	0.0	0.0
Detector 1 Delay (s)	0.0	0.0	5.0	0.0	3.0	3.0
Turn Type	NA	Perm	D.P+P	NA	Prot	Perm
Protected Phases	1		3	1 3	2	
Permitted Phases		1	1		2	
Detector Phase	1	1	3	1 3	2	2



Lane Group	SET	SER	NWL	NWT	NEL	NER
Switch Phase						
Minimum Initial (s)	10.0	10.0	5.0		7.0	7.0
Minimum Split (s)	26.0	26.0	12.0		19.0	19.0
Total Split (s)	54.0	54.0	12.0		54.0	54.0
Total Split (%)	45.0%	45.0%	10.0%		45.0%	45.0%
Maximum Green (s)	48.3	48.3	6.3		48.6	48.6
Yellow Time (s)	3.0	3.0	3.0		3.2	3.2
All-Red Time (s)	2.7	2.7	2.7		2.2	2.2
Lost Time Adjust (s)	0.0	0.0	0.0		0.0	0.0
Total Lost Time (s)	5.7	5.7	5.7		5.4	5.4
Lead/Lag	Lead	Lead		Lag	Lag	
Lead-Lag Optimize?						
Vehicle Extension (s)	0.2	0.2	3.0		3.0	3.0
Recall Mode	C-Max	C-Max	None		None	None
Walk Time (s)	7.0	7.0			7.0	7.0
Flash Dont Walk (s)	13.0	13.0			12.0	12.0
Pedestrian Calls (#/hr)	0	0			1	1
Act Effect Green (s)	50.4	50.4	69.5	75.2	33.7	33.7
Actuated g/C Ratio	0.42	0.42	0.58	0.63	0.28	0.28
v/c Ratio	0.41	0.39	0.12	0.66	0.81	0.44
Control Delay	24.4	6.2	11.6	21.7	52.9	6.0
Queue Delay	0.0	0.0	0.0	0.4	0.2	0.0
Total Delay	24.4	6.2	11.6	22.2	53.1	6.0
LOS	C	A	B	C	D	A
Approach Delay	15.7			21.1	35.5	
Approach LOS	B			C	D	

Intersection Summary

Area Type: Other

Cycle Length: 120

Actuated Cycle Length: 120

Offset: 0 (0%), Referenced to phase 1:NWSE, Start of Green, Master Intersection

Natural Cycle: 60

Control Type: Actuated-Coordinated

Maximum v/c Ratio: 0.81

Intersection Signal Delay: 24.5

Intersection LOS: C

Intersection Capacity Utilization 64.2%

ICU Level of Service C

Analysis Period (min) 15

* User Entered Value

Splits and Phases: 1: Baker Rd & Main St





Lane Group	SBL	SBR	SEL	SET	NWT	NWR
Lane Configurations	↑	↑	↑	↑	↔	
Traffic Volume (vph)	72	139	60	564	930	25
Future Volume (vph)	72	139	60	564	930	25
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Storage Length (ft)	0	60	100		0	
Storage Lanes	1	1	1		0	
Taper Length (ft)	25		75			
Lane Util. Factor	1.00	1.00	1.00	1.00	1.00	1.00
Ped Bike Factor		0.80			0.99	
Fr _t		0.850			0.996	
Flt Protected	0.950		0.950			
Satd. Flow (prot)	1462	1308	1462	1368	1342	0
Flt Permitted	0.950		0.146			
Satd. Flow (perm)	1462	1042	225	1368	1342	0
Right Turn on Red		Yes			Yes	
Satd. Flow (RTOR)		174			3	
Link Speed (mph)	25		25	25		
Link Distance (ft)	555		607	235		
Travel Time (s)	15.1			16.6	6.4	
Confl. Peds. (#/hr)		50	59		59	
Peak Hour Factor	0.80	0.80	0.85	0.85	0.92	0.92
Heavy Vehicles (%)	0%	0%	0%	0%	1%	1%
Parking (#/hr)	0	0	0	20	20	20
Adj. Flow (vph)	90	174	71	664	1011	27
Shared Lane Traffic (%)						
Lane Group Flow (vph)	90	174	71	664	1038	0
Enter Blocked Intersection	No	No	No	No	No	No
Lane Alignment	Left	Right	Left	Left	Left	Right
Median Width(ft)	12			12	12	
Link Offset(ft)	0			0	0	
Crosswalk Width(ft)	16			16	16	
Two way Left Turn Lane			Yes			
Headway Factor	*0.10	*0.10	1.30	1.51	1.51	1.14
Turning Speed (mph)	15	9	15			9
Number of Detectors	1	1	1	0	0	
Detector Template						
Leading Detector (ft)	20	20	20	0	0	
Trailing Detector (ft)	0	0	0	0	0	
Detector 1 Position(ft)	0	0	0	0	0	
Detector 1 Size(ft)	20	20	20	6	6	
Detector 1 Type	Cl+Ex	Cl+Ex	Cl+Ex	Cl+Ex	Cl+Ex	
Detector 1 Channel						
Detector 1 Extend (s)	0.0	0.0	0.0	0.0	0.0	
Detector 1 Queue (s)	0.0	0.0	0.0	0.0	0.0	
Detector 1 Delay (s)	3.0	3.0	3.0	0.0	0.0	
Turn Type	Prot	Perm	D.P+P	NA	NA	
Protected Phases	2		3	1 3	1	
Permitted Phases		2	1			
Detector Phase	2	2	3	1 3	1	



Lane Group	SBL	SBR	SEL	SET	NWT	NWR
Switch Phase						
Minimum Initial (s)	7.0	7.0	5.0		10.0	
Minimum Split (s)	16.0	16.0	13.0		25.0	
Total Split (s)	16.0	16.0	13.0		91.0	
Total Split (%)	13.3%	13.3%	10.8%		75.8%	
Maximum Green (s)	10.0	10.0	6.3		84.3	
Yellow Time (s)	3.0	3.0	3.0		3.0	
All-Red Time (s)	3.0	3.0	3.7		3.7	
Lost Time Adjust (s)	0.0	0.0	0.0		0.0	
Total Lost Time (s)	6.0	6.0	6.7		6.7	
Lead/Lag	Lag	Lag		Lead		
Lead-Lag Optimize?						
Vehicle Extension (s)	3.0	3.0	3.0		0.2	
Recall Mode	None	None	None		C-Max	
Walk Time (s)	7.0	7.0			7.0	
Flash Dont Walk (s)	9.0	9.0			11.0	
Pedestrian Calls (#/hr)	25	25			0	
Act Effect Green (s)	9.6	9.6	91.0	97.7	84.3	
Actuated g/C Ratio	0.08	0.08	0.76	0.81	0.70	
v/c Ratio	0.77	0.72	0.30	0.60	1.10	
Control Delay	92.7	24.7	5.8	6.7	78.4	
Queue Delay	0.0	0.0	0.0	0.0	0.0	
Total Delay	92.7	24.7	5.8	6.7	78.4	
LOS	F	C	A	A	E	
Approach Delay	47.9			6.6	78.4	
Approach LOS	D			A	E	

Intersection Summary

Area Type: CBD

Cycle Length: 120

Actuated Cycle Length: 120

Offset: 18 (15%), Referenced to phase 1:NWSE, Start of Green

Natural Cycle: 150

Control Type: Actuated-Coordinated

Maximum v/c Ratio: 1.10

Intersection Signal Delay: 48.6

Intersection LOS: D

Intersection Capacity Utilization 80.3%

ICU Level of Service D

Analysis Period (min) 15

* User Entered Value

Splits and Phases: 9: Main St & Broad St



SYNCHRO HCM LOS REPORTS

ALTERNATIVE TWO – RIGHT-TURN OVERLAPS

Lanes, Volumes, Timings

1: Baker Rd & Main St

08/03/2017



Lane Group	SET	SER	NWL	NWT	NEL	NER
Lane Configurations	↑	↗	↘	↑	↗	↘
Traffic Volume (vph)	406	571	123	151	231	71
Future Volume (vph)	406	571	123	151	231	71
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Storage Length (ft)		100	65		150	0
Storage Lanes		1	1		1	1
Taper Length (ft)			75		75	
Lane Util. Factor	1.00	1.00	1.00	1.00	1.00	1.00
Ped Bike Factor		0.94	0.99		1.00	0.98
Fr _t		0.850			0.850	
Flt Protected			0.950		0.950	
Satd. Flow (prot)	1863	1583	1719	1583	1736	1359
Flt Permitted			0.410		0.950	
Satd. Flow (perm)	1863	1489	731	1583	1727	1325
Right Turn on Red		Yes			Yes	
Satd. Flow (RTOR)		435			101	
Link Speed (mph)	25			25	30	
Link Distance (ft)	370			181	510	
Travel Time (s)	10.1			4.9	11.6	
Confl. Peds. (#/hr)		17	17		2	2
Peak Hour Factor	0.95	0.95	0.76	0.76	0.70	0.70
Heavy Vehicles (%)	2%	2%	5%	5%	4%	4%
Parking (#/hr)				5	5	
Adj. Flow (vph)	427	601	162	199	330	101
Shared Lane Traffic (%)						
Lane Group Flow (vph)	427	601	162	199	330	101
Enter Blocked Intersection	No	No	No	No	No	No
Lane Alignment	Left	Right	Left	Left	Left	Right
Median Width(ft)	12			12	12	
Link Offset(ft)	0			0	0	
Crosswalk Width(ft)	16			16	16	
Two way Left Turn Lane	Yes			Yes		
Headway Factor	1.00	1.00	1.00	1.19	1.00	1.19
Turning Speed (mph)		9	15		15	9
Number of Detectors	0	0	1	0	1	1
Detector Template						
Leading Detector (ft)	0	0	20	0	20	20
Trailing Detector (ft)	0	0	0	0	0	0
Detector 1 Position(ft)	0	0	0	0	0	0
Detector 1 Size(ft)	20	20	20	6	20	20
Detector 1 Type	Cl+Ex	Cl+Ex	Cl+Ex	Cl+Ex	Cl+Ex	Cl+Ex
Detector 1 Channel						
Detector 1 Extend (s)	0.0	0.0	0.0	0.0	0.0	0.0
Detector 1 Queue (s)	0.0	0.0	0.0	0.0	0.0	0.0
Detector 1 Delay (s)	0.0	0.0	5.0	0.0	3.0	3.0
Turn Type	NA	pm+ov	D.P+P	NA	Prot	pm+ov
Protected Phases	1	2	3	1 3	2	3
Permitted Phases		1	1			2
Detector Phase	1	2	3	1 3	2	3



Lane Group	SET	SER	NWL	NWT	NEL	NER
Switch Phase						
Minimum Initial (s)	10.0	7.0	5.0		7.0	5.0
Minimum Split (s)	26.0	19.0	12.0		19.0	12.0
Total Split (s)	39.0	39.0	12.0		39.0	12.0
Total Split (%)	43.3%	43.3%	13.3%		43.3%	13.3%
Maximum Green (s)	33.3	33.6	6.3		33.6	6.3
Yellow Time (s)	3.0	3.2	3.0		3.2	3.0
All-Red Time (s)	2.7	2.2	2.7		2.2	2.7
Lost Time Adjust (s)	0.0	0.0	0.0		0.0	0.0
Total Lost Time (s)	5.7	5.4	5.7		5.4	5.7
Lead/Lag	Lead	Lag		Lag		
Lead-Lag Optimize?						
Vehicle Extension (s)	0.2	3.0	3.0		3.0	3.0
Recall Mode	C-Max	None	None		None	None
Walk Time (s)	7.0	7.0			7.0	
Flash Dont Walk (s)	13.0	12.0			12.0	
Pedestrian Calls (#/hr)	0	2			2	
Act Effct Green (s)	43.4	67.2	49.7	55.4	23.5	29.5
Actuated g/C Ratio	0.48	0.75	0.55	0.62	0.26	0.33
v/c Ratio	0.48	0.48	0.34	0.20	0.73	0.20
Control Delay	14.3	1.9	11.4	9.6	39.2	4.0
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	14.3	1.9	11.4	9.6	39.2	4.0
LOS	B	A	B	A	D	A
Approach Delay	7.1			10.4	31.0	
Approach LOS	A			B	C	

Intersection Summary

Area Type: Other

Cycle Length: 90

Actuated Cycle Length: 90

Offset: 0 (0%), Referenced to phase 1:NWSE, Start of Green, Master Intersection

Natural Cycle: 60

Control Type: Actuated-Coordinated

Maximum v/c Ratio: 0.73

Intersection Signal Delay: 13.4

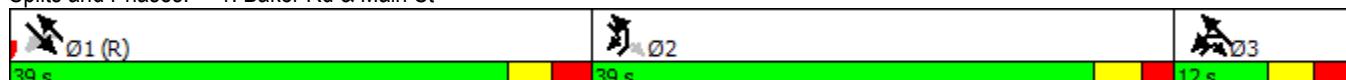
Intersection LOS: B

Intersection Capacity Utilization 55.2%

ICU Level of Service B

Analysis Period (min) 15

Splits and Phases: 1: Baker Rd & Main St





Lane Group	SBL	SBR	SEL	SET	NWT	NWR
Lane Configurations	1	1	1	1	1	1
Traffic Volume (vph)	141	151	15	878	308	43
Future Volume (vph)	141	151	15	878	308	43
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Storage Length (ft)	0	60	100		0	
Storage Lanes	1	1	1		0	
Taper Length (ft)	25		75			
Lane Util. Factor	1.00	1.00	1.00	1.00	1.00	1.00
Ped Bike Factor	0.97	0.94	0.98		0.99	
Fr _t		0.850			0.983	
Flt Protected	0.950		0.950			
Satd. Flow (prot)	1392	1246	1433	1341	1308	0
Flt Permitted	0.950		0.457			
Satd. Flow (perm)	1349	1166	674	1341	1308	0
Right Turn on Red		Yes			Yes	
Satd. Flow (RTOR)		191			12	
Link Speed (mph)	25		25	25		
Link Distance (ft)	555		607	235		
Travel Time (s)	15.1			16.6	6.4	
Confl. Peds. (#/hr)	11	16	19		19	
Peak Hour Factor	0.79	0.79	0.95	0.95	0.83	0.83
Heavy Vehicles (%)	5%	5%	2%	2%	2%	2%
Parking (#/hr)	0	0	0	20	20	20
Adj. Flow (vph)	178	191	16	924	371	52
Shared Lane Traffic (%)						
Lane Group Flow (vph)	178	191	16	924	423	0
Enter Blocked Intersection	No	No	No	No	No	No
Lane Alignment	Left	Right	Left	Left	Left	Right
Median Width(ft)	12		12	12		
Link Offset(ft)	0		0	0		
Crosswalk Width(ft)	16		16	16		
Two way Left Turn Lane			Yes			
Headway Factor	1.30	1.30	1.30	1.51	1.51	1.14
Turning Speed (mph)	15	9	15			9
Number of Detectors	1	1	1	0	0	
Detector Template						
Leading Detector (ft)	20	20	20	0	0	
Trailing Detector (ft)	0	0	0	0	0	
Detector 1 Position(ft)	0	0	0	0	0	
Detector 1 Size(ft)	20	20	20	6	6	
Detector 1 Type	Cl+Ex	Cl+Ex	Cl+Ex	Cl+Ex	Cl+Ex	
Detector 1 Channel						
Detector 1 Extend (s)	0.0	0.0	0.0	0.0	0.0	
Detector 1 Queue (s)	0.0	0.0	0.0	0.0	0.0	
Detector 1 Delay (s)	3.0	3.0	3.0	0.0	0.0	
Turn Type	Prot	pm+ov	D.P+P	NA	NA	
Protected Phases	2	3	3	1 3	1	
Permitted Phases		2	1			
Detector Phase	2	3	3	1 3	1	



Lane Group	SBL	SBR	SEL	SET	NWT	NWR
Switch Phase						
Minimum Initial (s)	7.0	5.0	5.0		10.0	
Minimum Split (s)	16.0	13.0	13.0		25.0	
Total Split (s)	22.0	13.0	13.0		55.0	
Total Split (%)	24.4%	14.4%	14.4%		61.1%	
Maximum Green (s)	16.0	6.3	6.3		48.3	
Yellow Time (s)	3.0	3.0	3.0		3.0	
All-Red Time (s)	3.0	3.7	3.7		3.7	
Lost Time Adjust (s)	0.0	0.0	0.0		0.0	
Total Lost Time (s)	6.0	6.7	6.7		6.7	
Lead/Lag	Lag			Lead		
Lead-Lag Optimize?						
Vehicle Extension (s)	3.0	3.0	3.0		0.2	
Recall Mode	None	None	None		C-Max	
Walk Time (s)	7.0				7.0	
Flash Dont Walk (s)	9.0				11.0	
Pedestrian Calls (#/hr)	8				0	
Act Effect Green (s)	14.6	20.2	56.0	62.7	49.7	
Actuated g/C Ratio	0.16	0.22	0.62	0.70	0.55	
v/c Ratio	0.79	0.46	0.03	0.99	0.58	
Control Delay	61.0	7.6	5.1	43.2	13.6	
Queue Delay	0.0	0.0	0.0	0.0	0.0	
Total Delay	61.0	7.6	5.1	43.2	13.6	
LOS	E	A	A	D	B	
Approach Delay	33.3			42.6	13.6	
Approach LOS	C			D	B	

Intersection Summary

Area Type: CBD

Cycle Length: 90

Actuated Cycle Length: 90

Offset: 63 (70%), Referenced to phase 1:NWSE, Start of Green

Natural Cycle: 90

Control Type: Actuated-Coordinated

Maximum v/c Ratio: 0.99

Intersection Signal Delay: 33.5

Intersection LOS: C

Intersection Capacity Utilization 72.5%

ICU Level of Service C

Analysis Period (min) 15

Splits and Phases: 9: Main St & Broad St



Lanes, Volumes, Timings

1: Baker Rd & Main St

08/03/2017



Lane Group	SET	SER	NWL	NWT	NEL	NER
Lane Configurations	↑	↑	↑	↑	↑	↑
Traffic Volume (vph)	202	274	28	238	311	58
Future Volume (vph)	202	274	28	238	311	58
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Storage Length (ft)		100	65		150	0
Storage Lanes		1	1		1	1
Taper Length (ft)			75		75	
Lane Util. Factor	1.00	1.00	1.00	1.00	1.00	1.00
Ped Bike Factor		0.97	0.99		1.00	
Fr _t		0.850			0.850	
Flt Protected			0.950		0.950	
Satd. Flow (prot)	1827	1553	1752	1642	1752	1395
Flt Permitted			0.595		0.950	
Satd. Flow (perm)	1827	1506	1090	1642	1745	1395
Right Turn on Red		Yes			Yes	
Satd. Flow (RTOR)		322			61	
Link Speed (mph)	25		25		30	
Link Distance (ft)	370			181	510	
Travel Time (s)	10.1			4.9	11.6	
Confl. Peds. (#/hr)		5	5		2	
Peak Hour Factor	0.85	0.85	0.86	0.86	0.95	0.95
Heavy Vehicles (%)	4%	4%	3%	3%	3%	3%
Parking (#/hr)				2	2	
Adj. Flow (vph)	238	322	33	277	327	61
Shared Lane Traffic (%)						
Lane Group Flow (vph)	238	322	33	277	327	61
Enter Blocked Intersection	No	No	No	No	No	No
Lane Alignment	Left	Right	Left	Left	Left	Right
Median Width(ft)	12			12	12	
Link Offset(ft)	0			0	0	
Crosswalk Width(ft)	16			16	16	
Two way Left Turn Lane	Yes			Yes		
Headway Factor	1.00	1.00	1.00	1.16	1.00	1.16
Turning Speed (mph)		9	15		15	9
Number of Detectors	0	0	1	0	1	1
Detector Template						
Leading Detector (ft)	0	0	20	0	20	20
Trailing Detector (ft)	0	0	0	0	0	0
Detector 1 Position(ft)	0	0	0	0	0	0
Detector 1 Size(ft)	20	20	20	6	20	20
Detector 1 Type	Cl+Ex	Cl+Ex	Cl+Ex	Cl+Ex	Cl+Ex	Cl+Ex
Detector 1 Channel						
Detector 1 Extend (s)	0.0	0.0	0.0	0.0	0.0	0.0
Detector 1 Queue (s)	0.0	0.0	0.0	0.0	0.0	0.0
Detector 1 Delay (s)	0.0	0.0	5.0	0.0	3.0	3.0
Turn Type	NA	pm+ov	D.P+P	NA	Prot	pm+ov
Protected Phases	1	2	3	1 3	2	3
Permitted Phases		1	1			2
Detector Phase	1	2	3	1 3	2	3



Lane Group	SET	SER	NWL	NWT	NEL	NER
Switch Phase						
Minimum Initial (s)	10.0	7.0	5.0		7.0	5.0
Minimum Split (s)	26.0	19.0	12.0		19.0	12.0
Total Split (s)	34.0	34.0	12.0		34.0	12.0
Total Split (%)	42.5%	42.5%	15.0%		42.5%	15.0%
Maximum Green (s)	28.3	28.6	6.3		28.6	6.3
Yellow Time (s)	3.0	3.2	3.0		3.2	3.0
All-Red Time (s)	2.7	2.2	2.7		2.2	2.7
Lost Time Adjust (s)	0.0	0.0	0.0		0.0	0.0
Total Lost Time (s)	5.7	5.4	5.7		5.4	5.7
Lead/Lag	Lead	Lag		Lag		
Lead-Lag Optimize?						
Vehicle Extension (s)	0.2	3.0	3.0		3.0	3.0
Recall Mode	C-Max	None	None		None	None
Walk Time (s)	7.0	7.0			7.0	
Flash Dont Walk (s)	13.0	12.0			12.0	
Pedestrian Calls (#/hr)	0	2			2	
Act Effct Green (s)	36.4	57.2	42.7	48.4	20.5	32.2
Actuated g/C Ratio	0.46	0.72	0.53	0.60	0.26	0.40
v/c Ratio	0.29	0.27	0.05	0.28	0.73	0.10
Control Delay	14.6	2.4	8.6	9.6	36.4	3.8
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	14.6	2.4	8.6	9.6	36.4	3.8
LOS	B	A	A	A	D	A
Approach Delay	7.6			9.5	31.3	
Approach LOS	A			A	C	

Intersection Summary

Area Type: Other

Cycle Length: 80

Actuated Cycle Length: 80

Offset: 0 (0%), Referenced to phase 1:NWSE, Start of Green, Master Intersection

Natural Cycle: 60

Control Type: Actuated-Coordinated

Maximum v/c Ratio: 0.73

Intersection Signal Delay: 15.4

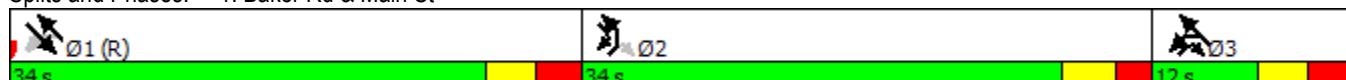
Intersection LOS: B

Intersection Capacity Utilization 49.7%

ICU Level of Service A

Analysis Period (min) 15

Splits and Phases: 1: Baker Rd & Main St





Lane Group	SBL	SBR	SEL	SET	NWT	NWR
Lane Configurations	↑	↑	↑	↑	↔	
Traffic Volume (vph)	73	65	36	458	495	48
Future Volume (vph)	73	65	36	458	495	48
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Storage Length (ft)	0	60	100		0	
Storage Lanes	1	1	1		0	
Taper Length (ft)	25		75			
Lane Util. Factor	1.00	1.00	1.00	1.00	1.00	1.00
Ped Bike Factor	0.93	0.88	0.98		0.99	
Fr _t		0.850			0.988	
Flt Protected	0.950		0.950			
Satd. Flow (prot)	1433	1283	1462	1454	1410	0
Flt Permitted	0.950		0.355			
Satd. Flow (perm)	1329	1128	534	1454	1410	0
Right Turn on Red		Yes			Yes	
Satd. Flow (RTOR)		82			10	
Link Speed (mph)	25		25	25		
Link Distance (ft)	555		607	235		
Travel Time (s)	15.1			16.6	6.4	
Confl. Peds. (#/hr)	29	41	32		32	
Peak Hour Factor	0.79	0.79	0.81	0.81	0.93	0.93
Heavy Vehicles (%)	2%	2%	0%	0%	1%	1%
Parking (#/hr)	0	0	0	10	10	10
Adj. Flow (vph)	92	82	44	565	532	52
Shared Lane Traffic (%)						
Lane Group Flow (vph)	92	82	44	565	584	0
Enter Blocked Intersection	No	No	No	No	No	No
Lane Alignment	Left	Right	Left	Left	Left	Right
Median Width(ft)	12			12	12	
Link Offset(ft)	0			0	0	
Crosswalk Width(ft)	16			16	16	
Two way Left Turn Lane			Yes			
Headway Factor	1.30	1.30	1.30	1.40	1.40	1.14
Turning Speed (mph)	15	9	15			9
Number of Detectors	1	1	1	0	0	
Detector Template						
Leading Detector (ft)	20	20	20	0	0	
Trailing Detector (ft)	0	0	0	0	0	
Detector 1 Position(ft)	0	0	0	0	0	
Detector 1 Size(ft)	20	20	20	6	6	
Detector 1 Type	Cl+Ex	Cl+Ex	Cl+Ex	Cl+Ex	Cl+Ex	
Detector 1 Channel						
Detector 1 Extend (s)	0.0	0.0	0.0	0.0	0.0	
Detector 1 Queue (s)	0.0	0.0	0.0	0.0	0.0	
Detector 1 Delay (s)	3.0	3.0	3.0	0.0	0.0	
Turn Type	Prot	pm+ov	D.P+P	NA	NA	
Protected Phases	2	3	3	1 3	1	
Permitted Phases		2	1			
Detector Phase	2	3	3	1 3	1	



Lane Group	SBL	SBR	SEL	SET	NWT	NWR
Switch Phase						
Minimum Initial (s)	7.0	5.0	5.0		10.0	
Minimum Split (s)	16.0	13.0	13.0		25.0	
Total Split (s)	16.0	13.0	13.0		51.0	
Total Split (%)	20.0%	16.3%	16.3%		63.8%	
Maximum Green (s)	10.0	6.3	6.3		44.3	
Yellow Time (s)	3.0	3.0	3.0		3.0	
All-Red Time (s)	3.0	3.7	3.7		3.7	
Lost Time Adjust (s)	0.0	0.0	0.0		0.0	
Total Lost Time (s)	6.0	6.7	6.7		6.7	
Lead/Lag	Lag			Lead		
Lead-Lag Optimize?						
Vehicle Extension (s)	3.0	3.0	3.0		0.2	
Recall Mode	None	None	None		C-Max	
Walk Time (s)	7.0				7.0	
Flash Dont Walk (s)	9.0				11.0	
Pedestrian Calls (#/hr)	21				0	
Act Effect Green (s)	9.1	13.5	54.1	62.1	47.8	
Actuated g/C Ratio	0.11	0.17	0.68	0.78	0.60	
v/c Ratio	0.56	0.30	0.10	0.50	0.69	
Control Delay	47.2	8.9	4.1	6.6	13.9	
Queue Delay	0.0	0.0	0.0	0.0	0.0	
Total Delay	47.2	8.9	4.1	6.6	13.9	
LOS	D	A	A	A	B	
Approach Delay	29.1			6.4	13.9	
Approach LOS	C			A	B	

Intersection Summary

Area Type: CBD

Cycle Length: 80

Actuated Cycle Length: 80

Offset: 55 (69%), Referenced to phase 1:NWSE, Start of Green

Natural Cycle: 65

Control Type: Actuated-Coordinated

Maximum v/c Ratio: 0.69

Intersection Signal Delay: 12.5

Intersection LOS: B

Intersection Capacity Utilization 55.2%

ICU Level of Service B

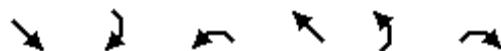
Analysis Period (min) 15

Splits and Phases: 9: Main St & Broad St



Lanes, Volumes, Timings
1: Baker Rd & Main St

08/03/2017



Lane Group	SET	SER	NWL	NWT	NEL	NER
Lane Configurations	↑	↑	↑	↑	↑	↑
Traffic Volume (vph)	281	253	53	459	379	227
Future Volume (vph)	281	253	53	459	379	227
Ideal Flow (vphpl)	1900	1900	1350	1350	1900	1900
Storage Length (ft)		100	65		150	0
Storage Lanes		1	1		1	1
Taper Length (ft)			75		75	
Lane Util. Factor	1.00	1.00	1.00	1.00	1.00	1.00
Ped Bike Factor		0.93	0.98		1.00	0.98
Fr _t		0.850			0.850	
Flt Protected			0.950		0.950	
Satd. Flow (prot)	1881	1599	1270	1170	1787	1399
Flt Permitted			0.505		0.950	
Satd. Flow (perm)	1881	1483	659	1170	1781	1367
Right Turn on Red		Yes			Yes	
Satd. Flow (RTOR)		291			244	
Link Speed (mph)	25			25	30	
Link Distance (ft)	370			181	510	
Travel Time (s)	10.1			4.9	11.6	
Confl. Peds. (#/hr)		17	17		1	1
Peak Hour Factor	0.87	0.87	0.95	0.95	0.93	0.93
Heavy Vehicles (%)	1%	1%	1%	1%	1%	1%
Parking (#/hr)				5	5	
Adj. Flow (vph)	323	291	56	483	408	244
Shared Lane Traffic (%)						
Lane Group Flow (vph)	323	291	56	483	408	244
Enter Blocked Intersection	No	No	No	No	No	No
Lane Alignment	Left	Right	Left	Left	Left	Right
Median Width(ft)	12			12	12	
Link Offset(ft)	0			0	0	
Crosswalk Width(ft)	16			16	16	
Two way Left Turn Lane	Yes			Yes		
Headway Factor	1.00	1.00	1.53	1.79	1.00	1.19
Turning Speed (mph)		9	15		15	9
Number of Detectors	0	0	1	0	1	1
Detector Template						
Leading Detector (ft)	0	0	20	0	20	20
Trailing Detector (ft)	0	0	0	0	0	0
Detector 1 Position(ft)	0	0	0	0	0	0
Detector 1 Size(ft)	20	20	20	6	20	20
Detector 1 Type	Cl+Ex	Cl+Ex	Cl+Ex	Cl+Ex	Cl+Ex	Cl+Ex
Detector 1 Channel						
Detector 1 Extend (s)	0.0	0.0	0.0	0.0	0.0	0.0
Detector 1 Queue (s)	0.0	0.0	0.0	0.0	0.0	0.0
Detector 1 Delay (s)	0.0	0.0	5.0	0.0	3.0	3.0
Turn Type	NA	pm+ov	D.P+P	NA	Prot	pm+ov
Protected Phases	1	2	3	1 3	2	3
Permitted Phases		1	1			2
Detector Phase	1	2	3	1 3	2	3



Lane Group	SET	SER	NWL	NWT	NEL	NER
Switch Phase						
Minimum Initial (s)	10.0	7.0	5.0		7.0	5.0
Minimum Split (s)	26.0	19.0	12.0		19.0	12.0
Total Split (s)	54.0	54.0	12.0		54.0	12.0
Total Split (%)	45.0%	45.0%	10.0%		45.0%	10.0%
Maximum Green (s)	48.3	48.6	6.3		48.6	6.3
Yellow Time (s)	3.0	3.2	3.0		3.2	3.0
All-Red Time (s)	2.7	2.2	2.7		2.2	2.7
Lost Time Adjust (s)	0.0	0.0	0.0		0.0	0.0
Total Lost Time (s)	5.7	5.4	5.7		5.4	5.7
Lead/Lag	Lead	Lag		Lag		
Lead-Lag Optimize?						
Vehicle Extension (s)	0.2	3.0	3.0		3.0	3.0
Recall Mode	C-Max	None	None		None	None
Walk Time (s)	7.0	7.0			7.0	
Flash Dont Walk (s)	13.0	12.0			12.0	
Pedestrian Calls (#/hr)	0	1			1	
Act Effct Green (s)	63.2	97.2	69.5	75.2	33.7	39.7
Actuated g/C Ratio	0.53	0.81	0.58	0.63	0.28	0.33
v/c Ratio	0.33	0.23	0.14	0.66	0.81	0.40
Control Delay	17.6	0.5	11.8	21.7	52.9	4.5
Queue Delay	0.0	0.0	0.0	0.3	0.4	0.0
Total Delay	17.6	0.5	11.8	22.1	53.3	4.5
LOS	B	A	B	C	D	A
Approach Delay	9.5			21.0	35.0	
Approach LOS	A			C	C	

Intersection Summary

Area Type: Other

Cycle Length: 120

Actuated Cycle Length: 120

Offset: 0 (0%), Referenced to phase 1:NWSE, Start of Green, Master Intersection

Natural Cycle: 60

Control Type: Actuated-Coordinated

Maximum v/c Ratio: 0.81

Intersection Signal Delay: 22.1

Intersection LOS: C

Intersection Capacity Utilization 64.2%

ICU Level of Service C

Analysis Period (min) 15

Splits and Phases: 1: Baker Rd & Main St





Lane Group	SBL	SBR	SEL	SET	NWT	NWR
Lane Configurations	↑	↑	↑	↑	↔	
Traffic Volume (vph)	72	139	60	564	930	25
Future Volume (vph)	72	139	60	564	930	25
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Storage Length (ft)	0	60	100		0	
Storage Lanes	1	1	1		0	
Taper Length (ft)	25		75			
Lane Util. Factor	1.00	1.00	1.00	1.00	1.00	1.00
Ped Bike Factor		0.80			0.99	
Fr _t		0.850			0.996	
Flt Protected	0.950		0.950			
Satd. Flow (prot)	1462	1308	1462	1368	1342	0
Flt Permitted	0.950		0.149			
Satd. Flow (perm)	1462	1042	229	1368	1342	0
Right Turn on Red		Yes			Yes	
Satd. Flow (RTOR)		131			3	
Link Speed (mph)	25		25	25		
Link Distance (ft)	555		607	235		
Travel Time (s)	15.1			16.6	6.4	
Confl. Peds. (#/hr)		50	59		59	
Peak Hour Factor	0.80	0.80	0.85	0.85	0.92	0.92
Heavy Vehicles (%)	0%	0%	0%	0%	1%	1%
Parking (#/hr)	0	0	0	20	20	20
Adj. Flow (vph)	90	174	71	664	1011	27
Shared Lane Traffic (%)						
Lane Group Flow (vph)	90	174	71	664	1038	0
Enter Blocked Intersection	No	No	No	No	No	No
Lane Alignment	Left	Right	Left	Left	Left	Right
Median Width(ft)	12			12	12	
Link Offset(ft)	0			0	0	
Crosswalk Width(ft)	16			16	16	
Two way Left Turn Lane			Yes			
Headway Factor	1.30	1.30	1.30	1.51	1.51	1.14
Turning Speed (mph)	15	9	15			9
Number of Detectors	1	1	1	0	0	
Detector Template						
Leading Detector (ft)	20	20	20	0	0	
Trailing Detector (ft)	0	0	0	0	0	
Detector 1 Position(ft)	0	0	0	0	0	
Detector 1 Size(ft)	20	20	20	6	6	
Detector 1 Type	Cl+Ex	Cl+Ex	Cl+Ex	Cl+Ex	Cl+Ex	
Detector 1 Channel						
Detector 1 Extend (s)	0.0	0.0	0.0	0.0	0.0	
Detector 1 Queue (s)	0.0	0.0	0.0	0.0	0.0	
Detector 1 Delay (s)	3.0	3.0	3.0	0.0	0.0	
Turn Type	Prot	pm+ov	D.P+P	NA	NA	
Protected Phases	2	3	3	1 3	1	
Permitted Phases		2	1			
Detector Phase	2	3	3	1 3	1	



Lane Group	SBL	SBR	SEL	SET	NWT	NWR
Switch Phase						
Minimum Initial (s)	7.0	5.0	5.0		10.0	
Minimum Split (s)	16.0	13.0	13.0		25.0	
Total Split (s)	16.0	13.0	13.0		91.0	
Total Split (%)	13.3%	10.8%	10.8%		75.8%	
Maximum Green (s)	10.0	6.3	6.3		84.3	
Yellow Time (s)	3.0	3.0	3.0		3.0	
All-Red Time (s)	3.0	3.7	3.7		3.7	
Lost Time Adjust (s)	0.0	0.0	0.0		0.0	
Total Lost Time (s)	6.0	6.7	6.7		6.7	
Lead/Lag	Lag			Lead		
Lead-Lag Optimize?						
Vehicle Extension (s)	3.0	3.0	3.0		0.2	
Recall Mode	None	None	None		C-Max	
Walk Time (s)	7.0				7.0	
Flash Dont Walk (s)	9.0				11.0	
Pedestrian Calls (#/hr)	25				0	
Act Effect Green (s)	9.6	15.2	91.0	97.7	84.7	
Actuated g/C Ratio	0.08	0.13	0.76	0.81	0.71	
v/c Ratio	0.77	0.67	0.30	0.60	1.10	
Control Delay	92.7	27.0	5.8	6.7	75.9	
Queue Delay	0.0	0.0	0.0	0.0	0.5	
Total Delay	92.7	27.0	5.8	6.7	76.4	
LOS	F	C	A	A	E	
Approach Delay	49.4			6.6	76.4	
Approach LOS	D			A	E	

Intersection Summary

Area Type: CBD

Cycle Length: 120

Actuated Cycle Length: 120

Offset: 20 (17%), Referenced to phase 1:NWSE, Start of Green

Natural Cycle: 140

Control Type: Actuated-Coordinated

Maximum v/c Ratio: 1.10

Intersection Signal Delay: 47.7

Intersection LOS: D

Intersection Capacity Utilization 80.9%

ICU Level of Service D

Analysis Period (min) 15

Splits and Phases: 9: Main St & Broad St



SYNCHRO HCM LOS REPORTS

ALTERNATIVE THREE – NO LEFT-TURNS AT CENTRAL STREET

Lanes, Volumes, Timings

1: Baker Rd & Main St

08/08/2017



Lane Group	SET	SER	NWL	NWT	NEL	NER
Lane Configurations	↑	↑	↑	↑	↑	↑
Traffic Volume (vph)	406	571	123	151	231	71
Future Volume (vph)	406	571	123	151	231	71
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Storage Length (ft)		100	65		150	0
Storage Lanes		1	1		1	1
Taper Length (ft)			75		75	
Lane Util. Factor	1.00	1.00	1.00	1.00	1.00	1.00
Ped Bike Factor		0.94	0.99		1.00	0.98
Fr _t		0.850			0.850	
Flt Protected			0.950		0.950	
Satd. Flow (prot)	1863	1583	1719	1583	1736	1359
Flt Permitted			0.410		0.950	
Satd. Flow (perm)	1863	1489	731	1583	1727	1325
Right Turn on Red		Yes			Yes	
Satd. Flow (RTOR)		435			101	
Link Speed (mph)	25			25	30	
Link Distance (ft)	370			181	510	
Travel Time (s)	10.1			4.9	11.6	
Confl. Peds. (#/hr)		17	17		2	2
Peak Hour Factor	0.95	0.95	0.76	0.76	0.70	0.70
Heavy Vehicles (%)	2%	2%	5%	5%	4%	4%
Parking (#/hr)				5	5	
Adj. Flow (vph)	427	601	162	199	330	101
Shared Lane Traffic (%)						
Lane Group Flow (vph)	427	601	162	199	330	101
Enter Blocked Intersection	No	No	No	No	No	No
Lane Alignment	Left	Right	Left	Left	Left	Right
Median Width(ft)	12			12	12	
Link Offset(ft)	0			0	0	
Crosswalk Width(ft)	16			16	16	
Two way Left Turn Lane	Yes			Yes		
Headway Factor	1.00	1.00	1.00	1.19	1.00	1.19
Turning Speed (mph)		9	15		15	9
Number of Detectors	0	0	1	0	1	1
Detector Template						
Leading Detector (ft)	0	0	20	0	20	20
Trailing Detector (ft)	0	0	0	0	0	0
Detector 1 Position(ft)	0	0	0	0	0	0
Detector 1 Size(ft)	20	20	20	6	20	20
Detector 1 Type	Cl+Ex	Cl+Ex	Cl+Ex	Cl+Ex	Cl+Ex	Cl+Ex
Detector 1 Channel						
Detector 1 Extend (s)	0.0	0.0	0.0	0.0	0.0	0.0
Detector 1 Queue (s)	0.0	0.0	0.0	0.0	0.0	0.0
Detector 1 Delay (s)	0.0	0.0	5.0	0.0	3.0	3.0
Turn Type	NA	pm+ov	D.P+P	NA	Prot	pm+ov
Protected Phases	1	2	3	1 3	2	3
Permitted Phases		1	1			2
Detector Phase	1	2	3	1 3	2	3

Lanes, Volumes, Timings

1: Baker Rd & Main St

08/08/2017



Lane Group	SET	SER	NWL	NWT	NEL	NER
Switch Phase						
Minimum Initial (s)	10.0	7.0	5.0		7.0	5.0
Minimum Split (s)	26.0	19.0	12.0		19.0	12.0
Total Split (s)	39.0	39.0	12.0		39.0	12.0
Total Split (%)	43.3%	43.3%	13.3%		43.3%	13.3%
Maximum Green (s)	33.3	33.6	6.3		33.6	6.3
Yellow Time (s)	3.0	3.2	3.0		3.2	3.0
All-Red Time (s)	2.7	2.2	2.7		2.2	2.7
Lost Time Adjust (s)	0.0	0.0	0.0		0.0	0.0
Total Lost Time (s)	5.7	5.4	5.7		5.4	5.7
Lead/Lag	Lead	Lag		Lag		
Lead-Lag Optimize?						
Vehicle Extension (s)	0.2	3.0	3.0		3.0	3.0
Recall Mode	C-Max	None	None		None	None
Walk Time (s)	7.0	7.0			7.0	
Flash Dont Walk (s)	13.0	12.0			12.0	
Pedestrian Calls (#/hr)	0	2			2	
Act Effct Green (s)	43.4	67.2	49.7	55.4	23.5	29.5
Actuated g/C Ratio	0.48	0.75	0.55	0.62	0.26	0.33
v/c Ratio	0.48	0.48	0.34	0.20	0.73	0.20
Control Delay	13.7	1.7	11.4	9.6	39.2	4.0
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	13.7	1.7	11.4	9.6	39.2	4.0
LOS	B	A	B	A	D	A
Approach Delay	6.7			10.4	31.0	
Approach LOS	A			B	C	

Intersection Summary

Area Type: Other

Cycle Length: 90

Actuated Cycle Length: 90

Offset: 0 (0%), Referenced to phase 1:NWSE, Start of Green, Master Intersection

Natural Cycle: 60

Control Type: Actuated-Coordinated

Maximum v/c Ratio: 0.73

Intersection Signal Delay: 13.2

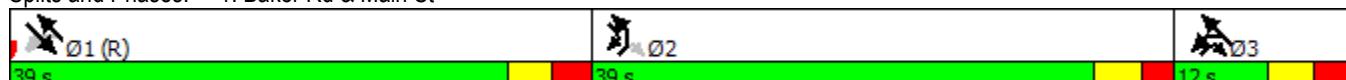
Intersection LOS: B

Intersection Capacity Utilization 55.2%

ICU Level of Service B

Analysis Period (min) 15

Splits and Phases: 1: Baker Rd & Main St





Lane Group	SBL	SBR	SEL	SET	NWT	NWR
Lane Configurations	↑	↑	↑	↑	↑	
Traffic Volume (vph)	194	151	91	878	308	43
Future Volume (vph)	194	151	91	878	308	43
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Storage Length (ft)	0	60	300			50
Storage Lanes	1	1	1			0
Taper Length (ft)	25		75			
Lane Util. Factor	1.00	1.00	1.00	1.00	1.00	1.00
Ped Bike Factor	0.97	0.94	0.98		0.99	
Fr _t		0.850			0.983	
Flt Protected	0.950		0.950			
Satd. Flow (prot)	1392	1246	1433	1341	1308	0
Flt Permitted	0.950		0.438			
Satd. Flow (perm)	1349	1166	647	1341	1308	0
Right Turn on Red		Yes			Yes	
Satd. Flow (RTOR)		148			11	
Link Speed (mph)	25		25	25		
Link Distance (ft)	555		607	235		
Travel Time (s)	15.1			16.6	6.4	
Confl. Peds. (#/hr)	11	16	19		19	
Peak Hour Factor	0.79	0.79	0.95	0.95	0.83	0.83
Heavy Vehicles (%)	5%	5%	2%	2%	2%	2%
Parking (#/hr)	0	0	0	20	20	20
Adj. Flow (vph)	246	191	96	924	371	52
Shared Lane Traffic (%)						
Lane Group Flow (vph)	246	191	96	924	423	0
Enter Blocked Intersection	No	No	No	No	No	No
Lane Alignment	Left	Right	Left	Left	Left	Right
Median Width(ft)	12		12	0		
Link Offset(ft)	0		0	0		
Crosswalk Width(ft)	16		16	16		
Two way Left Turn Lane			Yes			
Headway Factor	1.30	1.30	1.30	1.51	1.51	1.14
Turning Speed (mph)	15	9	15			9
Number of Detectors	1	1	1	0	0	
Detector Template						
Leading Detector (ft)	20	20	20	0	0	
Trailing Detector (ft)	0	0	0	0	0	
Detector 1 Position(ft)	0	0	0	0	0	
Detector 1 Size(ft)	20	20	20	6	6	
Detector 1 Type	Cl+Ex	Cl+Ex	Cl+Ex	Cl+Ex	Cl+Ex	
Detector 1 Channel						
Detector 1 Extend (s)	0.0	0.0	0.0	0.0	0.0	
Detector 1 Queue (s)	0.0	0.0	0.0	0.0	0.0	
Detector 1 Delay (s)	3.0	3.0	3.0	0.0	0.0	
Turn Type	Prot	pm+ov	D.P+P	NA	NA	
Protected Phases	2	3	3	1 3	1	
Permitted Phases		2	1			
Detector Phase	2	3	3	1 3	1	



Lane Group	SBL	SBR	SEL	SET	NWT	NWR
Switch Phase						
Minimum Initial (s)	7.0	5.0	5.0		10.0	
Minimum Split (s)	16.0	13.0	13.0		25.0	
Total Split (s)	26.0	13.0	13.0		51.0	
Total Split (%)	28.9%	14.4%	14.4%		56.7%	
Maximum Green (s)	20.0	6.3	6.3		44.3	
Yellow Time (s)	3.0	3.0	3.0		3.0	
All-Red Time (s)	3.0	3.7	3.7		3.7	
Lost Time Adjust (s)	0.0	0.0	0.0		0.0	
Total Lost Time (s)	6.0	6.7	6.7		6.7	
Lead/Lag	Lag			Lead		
Lead-Lag Optimize?						
Vehicle Extension (s)	3.0	3.0	3.0		0.2	
Recall Mode	None	None	None		C-Max	
Walk Time (s)	7.0				7.0	
Flash Dont Walk (s)	9.0				11.0	
Pedestrian Calls (#/hr)	8				0	
Act Effct Green (s)	18.6	24.2	52.0	58.7	45.7	
Actuated g/C Ratio	0.21	0.27	0.58	0.65	0.51	
v/c Ratio	0.86	0.45	0.22	1.06	0.63	
Control Delay	62.1	9.7	7.9	65.6	16.1	
Queue Delay	0.0	0.0	0.0	0.0	0.0	
Total Delay	62.1	9.7	7.9	65.6	16.1	
LOS	E	A	A	E	B	
Approach Delay	39.2			60.2	16.1	
Approach LOS	D			E	B	

Intersection Summary

Area Type: CBD

Cycle Length: 90

Actuated Cycle Length: 90

Offset: 63 (70%), Referenced to phase 1:NWSE, Start of Green

Natural Cycle: 90

Control Type: Actuated-Coordinated

Maximum v/c Ratio: 1.06

Intersection Signal Delay: 45.4

Intersection LOS: D

Intersection Capacity Utilization 74.4%

ICU Level of Service D

Analysis Period (min) 15

Splits and Phases: 9: Main St & Broad St



Intersection

Int Delay, s/veh 1.4

Movement	SEL	SET	SER	NWL	NWT	NWR	NEL	NET	NER	SWL	SWT	SWR
Lane Configurations												
Traffic Vol, veh/h	0	897	5	12	310	58	6	0	11	0	2	64
Future Vol, veh/h	0	897	5	12	310	58	6	0	11	0	2	64
Conflicting Peds, #/hr	5	0	17	17	0	5	0	0	6	6	0	0
Sign Control	Free	Free	Free	Free	Free	Free	Stop	Stop	Stop	Stop	Stop	Stop
RT Channelized	-	-	None									
Storage Length	-	-	-	75	-	-	-	-	-	-	-	-
Veh in Median Storage, #	-	0	-	-	0	-	-	0	-	-	0	-
Grade, %	-	0	-	-	0	-	-	0	-	-	0	-
Peak Hour Factor	95	95	95	78	78	78	60	60	60	74	74	74
Heavy Vehicles, %	1	1	1	3	3	3	0	0	3	3	3	3
Mvmt Flow	0	944	5	15	397	74	10	0	18	0	3	86

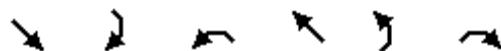
Major/Minor	Major1	Major2			Minor1			Minor2			
Conflicting Flow All	-	0	0	966	0	0	1474	1472	970	-	1436 440
Stage 1	-	-	-	-	-	-	964	964	-	-	470 -
Stage 2	-	-	-	-	-	-	510	508	-	-	966 -
Critical Hdwy	-	-	-	4.13	-	-	7.1	6.5	6.23	-	6.53 6.23
Critical Hdwy Stg 1	-	-	-	-	-	-	6.1	5.5	-	-	5.53 -
Critical Hdwy Stg 2	-	-	-	-	-	-	6.1	5.5	-	-	5.53 -
Follow-up Hdwy	-	-	-	2.227	-	-	3.5	4	3.327	-	4.027 3.327
Pot Cap-1 Maneuver	0	-	-	709	-	-	106	128	306	0	133 615
Stage 1	0	-	-	-	-	-	309	336	-	0	558 -
Stage 2	0	-	-	-	-	-	550	542	-	0	332 -
Platoon blocked, %	-	-	-	-	-	-	-	-	-	-	-
Mov Cap-1 Maneuver	-	-	-	705	-	-	87	123	299	-	127 612
Mov Cap-2 Maneuver	-	-	-	-	-	-	87	123	-	-	127 -
Stage 1	-	-	-	-	-	-	309	331	-	-	544 -
Stage 2	-	-	-	-	-	-	460	528	-	-	327 -

Approach	SE	NW			NE			SW		
HCM Control Delay, s	0	0.3			32.1			12.8		
HCM LOS					D			B		
Minor Lane/Major Mvmt										
Capacity (veh/h)	161	705	-	-	-	-	549			
HCM Lane V/C Ratio	0.176	0.022	-	-	-	-	0.162			
HCM Control Delay (s)	32.1	10.2	-	-	-	-	12.8			
HCM Lane LOS	D	B	-	-	-	-	B			
HCM 95th %tile Q(veh)	0.6	0.1	-	-	-	-	0.6			

Lanes, Volumes, Timings

1: Baker Rd & Main St

08/08/2017



Lane Group	SET	SER	NWL	NWT	NEL	NER
Lane Configurations	↑	↑	↑	↑	↑	↑
Traffic Volume (vph)	202	274	28	238	311	58
Future Volume (vph)	202	274	28	238	311	58
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Storage Length (ft)		100	65		150	0
Storage Lanes		1	1		1	1
Taper Length (ft)			75		75	
Lane Util. Factor	1.00	1.00	1.00	1.00	1.00	1.00
Ped Bike Factor		0.97	0.99		1.00	
Fr _t		0.850			0.850	
Flt Protected			0.950		0.950	
Satd. Flow (prot)	1827	1553	1752	1642	1752	1395
Flt Permitted			0.598		0.950	
Satd. Flow (perm)	1827	1508	1096	1642	1746	1395
Right Turn on Red		Yes			Yes	
Satd. Flow (RTOR)		322			61	
Link Speed (mph)	25		25		30	
Link Distance (ft)	370			181	510	
Travel Time (s)	10.1			4.9	11.6	
Confl. Peds. (#/hr)		5	5		2	
Peak Hour Factor	0.85	0.85	0.86	0.86	0.95	0.95
Heavy Vehicles (%)	4%	4%	3%	3%	3%	3%
Parking (#/hr)				2	2	
Adj. Flow (vph)	238	322	33	277	327	61
Shared Lane Traffic (%)						
Lane Group Flow (vph)	238	322	33	277	327	61
Enter Blocked Intersection	No	No	No	No	No	No
Lane Alignment	Left	Right	Left	Left	Left	Right
Median Width(ft)	12			12	12	
Link Offset(ft)	0			0	0	
Crosswalk Width(ft)	16			16	16	
Two way Left Turn Lane	Yes			Yes		
Headway Factor	1.00	1.00	1.00	1.16	1.00	1.16
Turning Speed (mph)		9	15		15	9
Number of Detectors	0	0	1	0	1	1
Detector Template						
Leading Detector (ft)	0	0	20	0	20	20
Trailing Detector (ft)	0	0	0	0	0	0
Detector 1 Position(ft)	0	0	0	0	0	0
Detector 1 Size(ft)	20	20	20	6	20	20
Detector 1 Type	Cl+Ex	Cl+Ex	Cl+Ex	Cl+Ex	Cl+Ex	Cl+Ex
Detector 1 Channel						
Detector 1 Extend (s)	0.0	0.0	0.0	0.0	0.0	0.0
Detector 1 Queue (s)	0.0	0.0	0.0	0.0	0.0	0.0
Detector 1 Delay (s)	0.0	0.0	5.0	0.0	3.0	3.0
Turn Type	NA	pm+ov	D.P+P	NA	Prot	pm+ov
Protected Phases	1	2	3	1 3	2	3
Permitted Phases		1	1			2
Detector Phase	1	2	3	1 3	2	3

Lanes, Volumes, Timings

1: Baker Rd & Main St

08/08/2017



Lane Group	SET	SER	NWL	NWT	NEL	NER
Switch Phase						
Minimum Initial (s)	10.0	7.0	5.0		7.0	5.0
Minimum Split (s)	26.0	19.0	12.0		19.0	12.0
Total Split (s)	29.0	29.0	12.0		29.0	12.0
Total Split (%)	41.4%	41.4%	17.1%		41.4%	17.1%
Maximum Green (s)	23.3	23.6	6.3		23.6	6.3
Yellow Time (s)	3.0	3.2	3.0		3.2	3.0
All-Red Time (s)	2.7	2.2	2.7		2.2	2.7
Lost Time Adjust (s)	0.0	0.0	0.0		0.0	0.0
Total Lost Time (s)	5.7	5.4	5.7		5.4	5.7
Lead/Lag	Lead	Lag		Lag		
Lead-Lag Optimize?						
Vehicle Extension (s)	0.2	3.0	3.0		3.0	3.0
Recall Mode	C-Max	None	None		None	None
Walk Time (s)	7.0	7.0			7.0	
Flash Dont Walk (s)	13.0	12.0			12.0	
Pedestrian Calls (#/hr)	0	2			2	
Act Effct Green (s)	28.8	47.2	35.1	40.8	18.1	29.8
Actuated g/C Ratio	0.41	0.67	0.50	0.58	0.26	0.43
v/c Ratio	0.32	0.28	0.05	0.29	0.72	0.10
Control Delay	15.1	2.4	8.4	9.5	32.5	3.3
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	15.1	2.4	8.4	9.5	32.5	3.3
LOS	B	A	A	A	C	A
Approach Delay	7.8			9.4	27.9	
Approach LOS	A			A	C	

Intersection Summary

Area Type: Other

Cycle Length: 70

Actuated Cycle Length: 70

Offset: 0 (0%), Referenced to phase 1:NWSE, Start of Green, Master Intersection

Natural Cycle: 60

Control Type: Actuated-Coordinated

Maximum v/c Ratio: 0.72

Intersection Signal Delay: 14.4

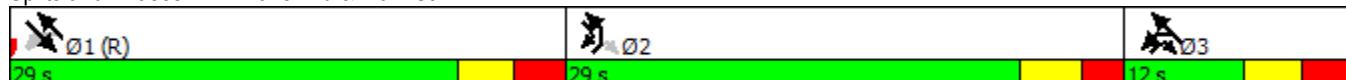
Intersection LOS: B

Intersection Capacity Utilization 49.7%

ICU Level of Service A

Analysis Period (min) 15

Splits and Phases: 1: Baker Rd & Main St





Lane Group	SBL	SBR	SEL	SET	NWT	NWR
Lane Configurations	↑	↑	↑	↑	↑	
Traffic Volume (vph)	107	65	112	458	495	48
Future Volume (vph)	107	65	112	458	495	48
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Storage Length (ft)	0	60	300			50
Storage Lanes	1	1	1			0
Taper Length (ft)	25		75			
Lane Util. Factor	1.00	1.00	1.00	1.00	1.00	1.00
Ped Bike Factor	0.94	0.89	0.98			0.99
Fr _t		0.850			0.988	
Flt Protected	0.950		0.950			
Satd. Flow (prot)	1433	1283	1462	1454	1412	0
Flt Permitted	0.950		0.328			
Satd. Flow (perm)	1342	1144	495	1454	1412	0
Right Turn on Red		Yes			Yes	
Satd. Flow (RTOR)		82			10	
Link Speed (mph)	25		25	25		
Link Distance (ft)	555		607	235		
Travel Time (s)	15.1			16.6	6.4	
Confl. Peds. (#/hr)	29	41	32		32	
Peak Hour Factor	0.79	0.79	0.81	0.81	0.93	0.93
Heavy Vehicles (%)	2%	2%	0%	0%	1%	1%
Parking (#/hr)	0	0	0	10	10	10
Adj. Flow (vph)	135	82	138	565	532	52
Shared Lane Traffic (%)						
Lane Group Flow (vph)	135	82	138	565	584	0
Enter Blocked Intersection	No	No	No	No	No	No
Lane Alignment	Left	Right	Left	Left	Left	Right
Median Width(ft)	12			12	0	
Link Offset(ft)	0			0	0	
Crosswalk Width(ft)	16			16	16	
Two way Left Turn Lane			Yes			
Headway Factor	1.30	1.30	1.30	1.40	1.40	1.14
Turning Speed (mph)	15	9	15			9
Number of Detectors	1	1	1	0	0	
Detector Template						
Leading Detector (ft)	20	20	20	0	0	
Trailing Detector (ft)	0	0	0	0	0	
Detector 1 Position(ft)	0	0	0	0	0	
Detector 1 Size(ft)	20	20	20	6	6	
Detector 1 Type	Cl+Ex	Cl+Ex	Cl+Ex	Cl+Ex	Cl+Ex	
Detector 1 Channel						
Detector 1 Extend (s)	0.0	0.0	0.0	0.0	0.0	
Detector 1 Queue (s)	0.0	0.0	0.0	0.0	0.0	
Detector 1 Delay (s)	3.0	3.0	3.0	0.0	0.0	
Turn Type	Prot	pm+ov	D.P+P	NA	NA	
Protected Phases	2	3	3	1 3	1	
Permitted Phases		2	1			
Detector Phase	2	3	3	1 3	1	



Lane Group	SBL	SBR	SEL	SET	NWT	NWR
Switch Phase						
Minimum Initial (s)	7.0	5.0	5.0		10.0	
Minimum Split (s)	16.0	13.0	13.0		25.0	
Total Split (s)	16.0	13.0	13.0		41.0	
Total Split (%)	22.9%	18.6%	18.6%		58.6%	
Maximum Green (s)	10.0	6.3	6.3		34.3	
Yellow Time (s)	3.0	3.0	3.0		3.0	
All-Red Time (s)	3.0	3.7	3.7		3.7	
Lost Time Adjust (s)	0.0	0.0	0.0		0.0	
Total Lost Time (s)	6.0	6.7	6.7		6.7	
Lead/Lag	Lag			Lead		
Lead-Lag Optimize?						
Vehicle Extension (s)	3.0	3.0	3.0		0.2	
Recall Mode	None	None	None		C-Max	
Walk Time (s)	7.0				7.0	
Flash Dont Walk (s)	9.0				11.0	
Pedestrian Calls (#/hr)	21				0	
Act Effect Green (s)	9.4	13.7	43.8	51.8	37.5	
Actuated g/C Ratio	0.13	0.20	0.63	0.74	0.54	
v/c Ratio	0.70	0.27	0.35	0.53	0.77	
Control Delay	50.0	7.2	7.0	7.7	18.9	
Queue Delay	0.0	0.0	0.0	0.0	0.0	
Total Delay	50.0	7.2	7.0	7.7	18.9	
LOS	D	A	A	A	B	
Approach Delay	33.8			7.6	18.9	
Approach LOS	C			A	B	

Intersection Summary

Area Type: CBD

Cycle Length: 70

Actuated Cycle Length: 70

Offset: 48 (69%), Referenced to phase 1:NWSE, Start of Green

Natural Cycle: 65

Control Type: Actuated-Coordinated

Maximum v/c Ratio: 0.77

Intersection Signal Delay: 15.8

Intersection LOS: B

Intersection Capacity Utilization 67.1%

ICU Level of Service C

Analysis Period (min) 15

Splits and Phases: 9: Main St & Broad St



Intersection

Int Delay, s/veh 1.6

Movement	SEL	SET	SER	NWL	NWT	NWR	NEL	NET	NER	SWL	SWT	SWR
Lane Configurations												
Traffic Vol, veh/h	0	426	31	11	465	56	7	5	17	0	3	60
Future Vol, veh/h	0	426	31	11	465	56	7	5	17	0	3	60
Conflicting Peds, #/hr	6	0	26	26	0	6	0	0	10	10	0	0
Sign Control	Free	Free	Free	Free	Free	Free	Stop	Stop	Stop	Stop	Stop	Stop
RT Channelized	-	-	None									
Storage Length	-	-	-	75	-	-	-	-	-	-	-	-
Veh in Median Storage, #	-	0	-	-	0	-	-	0	-	-	0	-
Grade, %	-	0	-	-	0	-	-	0	-	-	0	-
Peak Hour Factor	82	82	82	95	95	95	61	61	61	90	90	90
Heavy Vehicles, %	1	1	1	1	1	1	0	0	0	1	1	1
Mvmt Flow	0	520	38	12	489	59	11	8	28	0	3	67

Major/Minor	Major1	Major2			Minor1			Minor2				
Conflicting Flow All	-	0	0	583	0	0	1141	1142	574	-	1131	525
Stage 1	-	-	-	-	-	-	564	564	-	-	548	-
Stage 2	-	-	-	-	-	-	577	578	-	-	583	-
Critical Hdwy	-	-	-	4.11	-	-	7.1	6.5	6.2	-	6.51	6.21
Critical Hdwy Stg 1	-	-	-	-	-	-	6.1	5.5	-	-	5.51	-
Critical Hdwy Stg 2	-	-	-	-	-	-	6.1	5.5	-	-	5.51	-
Follow-up Hdwy	-	-	-	2.209	-	-	3.5	4	3.3	-	4.009	3.309
Pot Cap-1 Maneuver	0	-	-	996	-	-	179	202	522	0	204	554
Stage 1	0	-	-	-	-	-	514	512	-	0	519	-
Stage 2	0	-	-	-	-	-	506	504	-	0	500	-
Platoon blocked, %	-	-	-	-	-	-	-	-	-	-	-	-
Mov Cap-1 Maneuver	-	-	-	987	-	-	150	193	504	-	195	551
Mov Cap-2 Maneuver	-	-	-	-	-	-	150	193	-	-	195	-
Stage 1	-	-	-	-	-	-	514	499	-	-	510	-
Stage 2	-	-	-	-	-	-	436	495	-	-	488	-

Approach	SE	NW			NE			SW		
HCM Control Delay, s	0	0.2			20.9			13.2		
HCM LOS					C			B		
<hr/>										
Minor Lane/Major Mvmt	NELn1	NWL	NWT	NWR	SET	SERSWLn1				
Capacity (veh/h)	273	987	-	-	-	-	507			
HCM Lane V/C Ratio	0.174	0.012	-	-	-	-	0.138			
HCM Control Delay (s)	20.9	8.7	-	-	-	-	13.2			
HCM Lane LOS	C	A	-	-	-	-	B			
HCM 95th %tile Q(veh)	0.6	0	-	-	-	-	0.5			

Lanes, Volumes, Timings

1: Baker Rd & Main St

08/08/2017



Lane Group	SET	SER	NWL	NWT	NEL	NER
Lane Configurations	↑	↑	↑	↑	↑	↑
Traffic Volume (vph)	281	253	53	459	379	227
Future Volume (vph)	281	253	53	459	379	227
Ideal Flow (vphpl)	1900	1900	1350	1350	1900	1900
Storage Length (ft)		100	65		150	0
Storage Lanes		1	1		1	1
Taper Length (ft)			75		75	
Lane Util. Factor	1.00	1.00	1.00	1.00	1.00	1.00
Ped Bike Factor		0.93	0.98		1.00	0.98
Fr _t		0.850			0.850	
Flt Protected			0.950		0.950	
Satd. Flow (prot)	1881	1599	1270	1170	1787	1399
Flt Permitted			0.505		0.950	
Satd. Flow (perm)	1881	1483	659	1170	1781	1367
Right Turn on Red		Yes			Yes	
Satd. Flow (RTOR)		291			244	
Link Speed (mph)	25			25	30	
Link Distance (ft)	370			181	510	
Travel Time (s)	10.1			4.9	11.6	
Confl. Peds. (#/hr)		17	17		1	1
Peak Hour Factor	0.87	0.87	0.95	0.95	0.93	0.93
Heavy Vehicles (%)	1%	1%	1%	1%	1%	1%
Parking (#/hr)				5	5	
Adj. Flow (vph)	323	291	56	483	408	244
Shared Lane Traffic (%)						
Lane Group Flow (vph)	323	291	56	483	408	244
Enter Blocked Intersection	No	No	No	No	No	No
Lane Alignment	Left	Right	Left	Left	Left	Right
Median Width(ft)	12			12	12	
Link Offset(ft)	0			0	0	
Crosswalk Width(ft)	16			16	16	
Two way Left Turn Lane	Yes			Yes		
Headway Factor	1.00	1.00	1.53	1.79	1.00	1.19
Turning Speed (mph)		9	15		15	9
Number of Detectors	0	0	1	0	1	1
Detector Template						
Leading Detector (ft)	0	0	20	0	20	20
Trailing Detector (ft)	0	0	0	0	0	0
Detector 1 Position(ft)	0	0	0	0	0	0
Detector 1 Size(ft)	20	20	20	6	20	20
Detector 1 Type	Cl+Ex	Cl+Ex	Cl+Ex	Cl+Ex	Cl+Ex	Cl+Ex
Detector 1 Channel						
Detector 1 Extend (s)	0.0	0.0	0.0	0.0	0.0	0.0
Detector 1 Queue (s)	0.0	0.0	0.0	0.0	0.0	0.0
Detector 1 Delay (s)	0.0	0.0	5.0	0.0	3.0	3.0
Turn Type	NA	pm+ov	D.P+P	NA	Prot	pm+ov
Protected Phases	1	2	3	1 3	2	3
Permitted Phases		1	1			2
Detector Phase	1	2	3	1 3	2	3



Lane Group	SET	SER	NWL	NWT	NEL	NER
Switch Phase						
Minimum Initial (s)	10.0	7.0	5.0		7.0	5.0
Minimum Split (s)	26.0	19.0	12.0		19.0	12.0
Total Split (s)	54.0	54.0	12.0		54.0	12.0
Total Split (%)	45.0%	45.0%	10.0%		45.0%	10.0%
Maximum Green (s)	48.3	48.6	6.3		48.6	6.3
Yellow Time (s)	3.0	3.2	3.0		3.2	3.0
All-Red Time (s)	2.7	2.2	2.7		2.2	2.7
Lost Time Adjust (s)	0.0	0.0	0.0		0.0	0.0
Total Lost Time (s)	5.7	5.4	5.7		5.4	5.7
Lead/Lag	Lead	Lag		Lag		
Lead-Lag Optimize?						
Vehicle Extension (s)	0.2	3.0	3.0		3.0	3.0
Recall Mode	C-Max	None	None		None	None
Walk Time (s)	7.0	7.0			7.0	
Flash Dont Walk (s)	13.0	12.0			12.0	
Pedestrian Calls (#/hr)	0	1			1	
Act Effct Green (s)	63.2	97.2	69.5	75.2	33.7	39.7
Actuated g/C Ratio	0.53	0.81	0.58	0.63	0.28	0.33
v/c Ratio	0.33	0.23	0.14	0.66	0.81	0.40
Control Delay	16.9	0.4	11.8	21.7	52.9	4.5
Queue Delay	0.0	0.0	0.0	0.3	0.4	0.0
Total Delay	16.9	0.4	11.8	22.1	53.3	4.5
LOS	B	A	B	C	D	A
Approach Delay	9.1			21.0	35.0	
Approach LOS	A			C	C	

Intersection Summary

Area Type: Other

Cycle Length: 120

Actuated Cycle Length: 120

Offset: 0 (0%), Referenced to phase 1:NWSE, Start of Green, Master Intersection

Natural Cycle: 60

Control Type: Actuated-Coordinated

Maximum v/c Ratio: 0.81

Intersection Signal Delay: 22.0

Intersection LOS: C

Intersection Capacity Utilization 64.2%

ICU Level of Service C

Analysis Period (min) 15

Splits and Phases: 1: Baker Rd & Main St





Lane Group	SBL	SBR	SEL	SET	NWT	NWR
Lane Configurations	↑	↑	↑	↑	↔	
Traffic Volume (vph)	96	139	150	564	930	25
Future Volume (vph)	96	139	150	564	930	25
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Storage Length (ft)	0	60	300			50
Storage Lanes	1	1	1			0
Taper Length (ft)	25		75			
Lane Util. Factor	1.00	1.00	1.00	1.00	1.00	1.00
Ped Bike Factor		0.80			0.99	
Fr _t		0.850			0.996	
Flt Protected	0.950		0.950			
Satd. Flow (prot)	1462	1308	1462	1368	1342	0
Flt Permitted	0.950		0.146			
Satd. Flow (perm)	1462	1042	225	1368	1342	0
Right Turn on Red		Yes			Yes	
Satd. Flow (RTOR)		131			3	
Link Speed (mph)	25		25	25		
Link Distance (ft)	555		607	235		
Travel Time (s)	15.1			16.6	6.4	
Confl. Peds. (#/hr)		50	59		59	
Peak Hour Factor	0.80	0.80	0.85	0.85	0.92	0.92
Heavy Vehicles (%)	0%	0%	0%	0%	1%	1%
Parking (#/hr)	0	0	0	20	20	20
Adj. Flow (vph)	120	174	176	664	1011	27
Shared Lane Traffic (%)						
Lane Group Flow (vph)	120	174	176	664	1038	0
Enter Blocked Intersection	No	No	No	No	No	No
Lane Alignment	Left	Right	Left	Left	Left	Right
Median Width(ft)	12		12	0		
Link Offset(ft)	0		0	0		
Crosswalk Width(ft)	16		16	16		
Two way Left Turn Lane			Yes			
Headway Factor	1.30	1.30	1.30	1.51	1.51	1.14
Turning Speed (mph)	15	9	15			9
Number of Detectors	1	1	1	0	0	
Detector Template						
Leading Detector (ft)	20	20	20	0	0	
Trailing Detector (ft)	0	0	0	0	0	
Detector 1 Position(ft)	0	0	0	0	0	
Detector 1 Size(ft)	20	20	20	6	6	
Detector 1 Type	Cl+Ex	Cl+Ex	Cl+Ex	Cl+Ex	Cl+Ex	
Detector 1 Channel						
Detector 1 Extend (s)	0.0	0.0	0.0	0.0	0.0	
Detector 1 Queue (s)	0.0	0.0	0.0	0.0	0.0	
Detector 1 Delay (s)	3.0	3.0	3.0	0.0	0.0	
Turn Type	Prot	pm+ov	D.P+P	NA	NA	
Protected Phases	2	3	3	1 3	1	
Permitted Phases		2	1			
Detector Phase	2	3	3	1 3	1	



Lane Group	SBL	SBR	SEL	SET	NWT	NWR
Switch Phase						
Minimum Initial (s)	7.0	5.0	5.0		10.0	
Minimum Split (s)	16.0	13.0	13.0		25.0	
Total Split (s)	16.0	13.0	13.0		91.0	
Total Split (%)	13.3%	10.8%	10.8%		75.8%	
Maximum Green (s)	10.0	6.3	6.3		84.3	
Yellow Time (s)	3.0	3.0	3.0		3.0	
All-Red Time (s)	3.0	3.7	3.7		3.7	
Lost Time Adjust (s)	0.0	0.0	0.0		0.0	
Total Lost Time (s)	6.0	6.7	6.7		6.7	
Lead/Lag	Lag			Lead		
Lead-Lag Optimize?						
Vehicle Extension (s)	3.0	3.0	3.0		0.2	
Recall Mode	None	None	None		C-Max	
Walk Time (s)	7.0				7.0	
Flash Dont Walk (s)	9.0				11.0	
Pedestrian Calls (#/hr)	25				0	
Act Effct Green (s)	10.0	15.6	90.6	97.3	84.3	
Actuated g/C Ratio	0.08	0.13	0.76	0.81	0.70	
v/c Ratio	0.99	0.66	0.75	0.60	1.10	
Control Delay	135.1	26.5	28.0	6.8	77.7	
Queue Delay	0.0	0.0	0.0	0.0	0.0	
Total Delay	135.1	26.5	28.0	6.8	77.7	
LOS	F	C	C	A	E	
Approach Delay	70.8			11.3	77.7	
Approach LOS	E			B	E	

Intersection Summary

Area Type: CBD

Cycle Length: 120

Actuated Cycle Length: 120

Offset: 20 (17%), Referenced to phase 1:NWSE, Start of Green

Natural Cycle: 150

Control Type: Actuated-Coordinated

Maximum v/c Ratio: 1.10

Intersection Signal Delay: 51.1

Intersection LOS: D

Intersection Capacity Utilization 93.5%

ICU Level of Service F

Analysis Period (min) 15

Splits and Phases: 9: Main St & Broad St



Intersection

Int Delay, s/veh 1.8

Movement	SEL	SET	SER	NWL	NWT	NWR	NEL	NET	NER	SWL	SWT	SWR
Lane Configurations												
Traffic Vol, veh/h	0	481	22	9	808	30	4	3	38	0	2	59
Future Vol, veh/h	0	481	22	9	808	30	4	3	38	0	2	59
Conflicting Peds, #/hr	19	0	41	41	0	19	0	0	33	33	0	0
Sign Control	Free	Free	Free	Free	Free	Free	Stop	Stop	Stop	Stop	Stop	Stop
RT Channelized	-	-	None									
Storage Length	-	-	-	75	-	-	-	-	-	-	-	-
Veh in Median Storage, #	-	0	-	-	0	-	-	0	-	-	0	-
Grade, %	-	0	-	-	0	-	-	0	-	-	0	-
Peak Hour Factor	89	89	89	95	95	95	75	75	75	82	82	82
Heavy Vehicles, %	1	1	1	1	1	1	0	0	0	1	1	1
Mvmt Flow	0	540	25	9	851	32	5	4	51	0	2	72

Major/Minor	Major1	Major2			Minor1			Minor2				
Conflicting Flow All	-	0	0	606	0	0	1516	1514	627	-	1510	885
Stage 1	-	-	-	-	-	-	594	594	-	-	904	-
Stage 2	-	-	-	-	-	-	922	920	-	-	606	-
Critical Hdwy	-	-	-	4.11	-	-	7.1	6.5	6.2	-	6.51	6.21
Critical Hdwy Stg 1	-	-	-	-	-	-	6.1	5.5	-	-	5.51	-
Critical Hdwy Stg 2	-	-	-	-	-	-	6.1	5.5	-	-	5.51	-
Follow-up Hdwy	-	-	-	2.209	-	-	3.5	4	3.3	-	4.009	3.309
Pot Cap-1 Maneuver	0	-	-	977	-	-	99	121	487	0	121	345
Stage 1	0	-	-	-	-	-	495	496	-	0	357	-
Stage 2	0	-	-	-	-	-	327	352	-	0	488	-
Platoon blocked, %	-	-	-	-	-	-	-	-	-	-	-	-
Mov Cap-1 Maneuver	-	-	-	946	-	-	73	113	453	-	113	339
Mov Cap-2 Maneuver	-	-	-	-	-	-	73	113	-	-	113	-
Stage 1	-	-	-	-	-	-	495	477	-	-	347	-
Stage 2	-	-	-	-	-	-	253	342	-	-	469	-

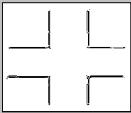
Approach	SE	NW			NE			SW		
HCM Control Delay, s	0	0.1			21.9			19.7		
HCM LOS					C			C		
<hr/>										
Minor Lane/Major Mvmt	NELn1	NWL	NWT	NWR	SET	SERSWLn1				
Capacity (veh/h)	272	946	-	-	-	-	318			
HCM Lane V/C Ratio	0.221	0.01	-	-	-	-	0.234			
HCM Control Delay (s)	21.9	8.8	-	-	-	-	19.7			
HCM Lane LOS	C	A	-	-	-	-	C			
HCM 95th %tile Q(veh)	0.8	0	-	-	-	-	0.9			

APPENDIX C

CLEARANCE INTERVALS & SIGNAL TIMING PERMITS

NOTES:

1. **UNDERLINED BLUE** fields have screen tips. Move cursor over text for tip.
2. White fields are required data to be entered.
3. Gray fields with **BLUE** text are calculated values - DO NOT MODIFY unless instructed to.
4. To add an intersection, click the picture below, and a blank intersection field will be added to the beginning of the table.



		Street Name	Approach	Valid Approach?	Split Phased?	Speed (MPH)	Approach Grade (%)	Intersection Width (ft)	Pedestrian Crossing Width (ft)	Ped Push Button to Crosswalk Distance (ft) Side 1	Ped Push Button to Crosswalk Distance (ft) Side 2	Min. Walk Interval (sec.)	Ped Walking Speed (ft/sec.)	Pedestrian Push Button?	Pedestrian Clearance Type	Pedestrian buffer interval included in ped clearance time?	Pedestrian buffer relationship to vehicle phase intervals	EPA/C Controller?	Minimum Green Interval	YELLOW TIME	ALL RED TIME	Min. Walk Interval - Controller/Synchro	FLASH DONT WALK CONTROLLER	EDW Interval_Synchro	Min. Split (larger of vehicle or pedestrian)
Main Street and Baker Road	Baker Road	NB	YES	NO	30	0%	72	45	9	7	7.0	3.5	YES	0	YES	2	YES	7.0	3.2	2.2	7.0	12.0	12.0	14.0	
		SB	NO		25	0%	56	10	12	7.0	3.5	YES	0	YES	2	n/a	n/a	7.0	12.0	12.0	19.0				
Main Street and Broad Street	Main Street	EB	YES	NO	25	0%	79	58	n/a	n/a	7.0	3.5	NO	0	YES	2	YES	10.0	3.0	2.7	7.0	13.0	13.0	26.0	
		WB	YES		25	0%	75	n/a	n/a	n/a	7.0	3.5	NO	0	YES	2		10.0	3.0	2.7	n/a	n/a	n/a	17.0	
Main Street and Broad Street	Broad Street	NB	NO	NO	25	0%	40	6	6	7.0	3.5	YES	0	YES	2	YES	n/a	n/a	7.0	9.0	9.0	9.0	16.0		
		SB	YES		25	0%	88	38	10	10	7.0	3.5	YES	0	YES	2	7.0	3.0	3.0	7.0	9.0	9.0	14.0		
Main Street and Broad Street	Main Street	EB	YES	NO	25	0%	115	n/a	n/a	n/a	7.0	3.5	NO	0	YES	2	YES	10.0	3.0	3.7	n/a	n/a	n/a	18.0	
		WB	YES		25	0%	94	51	n/a	n/a	7.0	3.5	NO	0	YES	2		10.0	3.0	3.7	7.0	11.0	11.0	25.0	

Values automatically highlighted in this format should be confirmed with MDOT Lansing Signals Unit.

Source equations are hidden in rows 1 through 5 and should not be adjusted without permission from MDOT Lansing Signals Unit. Intermediate calculations can also be viewed by unhiding columns between columns "T" and "AM."

Prepared for:



Original Workbook Author:

**PARNONS
BRINCKERHOFF**

VILLAGE OF DEXTER SIGNAL TIMING PERMIT

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Intersection:	Dexter Ann Arbor @ Baker							
Jurisdiction:	Recommended: <i>J Valant</i>	Approved/Date						
Equipment:	EPAC 30 Controller				Set - By / Date:		Field Values	
PER PHASE DATA & #	1	2	3	4	5	6	7	8
PHASE NAME								
VEHICLE / Min. Green	4	4	4	0	0	0	0	0
*Passage Time	0.0	3.0	3.0	0.0	0.0	0.0	0.0	0.0
Max. 1	38	29	16	0	0	0	0	0
Max. 2	0	0	0	0	0	0	0	0
**Yellow	4.5	4.5	4.5	4.0	4.0	4.0	4.0	4.0
*Red Clear	0.5	0.5	0.5	0.0	0.0	0.0	0.0	0.0
DENSITY / *Sec. Per. Act. /10	0	0	0	0	0	0	0	0
Max. Init.	0	0	0	0	0	0	0	0
Time Before	0	0	0	0	0	0	0	0
Cars Before	0	0	0	0	0	0	0	0
Time To	0	0	0	0	0	0	0	0
*Min. Gap /10	0	0	0	0	0	0	0	0
PEDESTRIAN / Walk	7	7	0	0	0	0	0	0
Ped. Clear	13	13	0	8	0	8	0	8
Flashing Walk	0	0	0	0	0	0	0	0
Extended Ped. Clear	1	1	0	0	0	0	0	0
Rest In Walk	0	0	0	0	0	0	0	0
INITIAL-NA / Initial:	4	1	1	0	0	0	0	0
NA Response	0	0	0	0	0	0	0	0
RECALL / Vehicle	3	0	0	0	0	0	0	0
Pedestrian	2	0	0	0	0	0	0	0
Delay	0	0	0	0	0	0	0	0
NON-LOCK & MISC. / NL	0	1	1	0	0	0	0	0
Dual Entry	0	0	0	0	0	0	0	0
Last Car Passage	0	0	0	0	0	0	0	0
SPECIAL SEQ. / omit	0	0	0	0	0	0	0	0

VILLAGE OF DEXTER SIGNAL TIMING PERMIT

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-Yellow.	0	0	0	0	0	0	0	0
PER DETECTOR & #	1	2	3	4	5	6	7	8
PHASE NAME								
VEH. DET. Assigned Phase:	1	2	3	4	5	6	7	8
Mode	0	0	0	0	0	0	0	0
Switch	0	0	0	0	0	0	0	0
*Extend	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Delay	0	3	5	0	0	0	0	0
PED. DET. Assigned Phase	1	2	3	4	5	6	7	8
Mode	1	1	1	1	1	1	1	1
Switch	0	0	0	0	0	0	0	0
*Extend	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Delay	0	0	0	0	0	0	0	0
SPEC DET. Assigned Phase	0	0	0	0	0	0	0	0
Mode	0	0	0	0	0	0	0	0
Switch	0	0	0	0	0	0	0	0
*Extend	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Delay	0	0	0	0	0	0	0	0

Note: Values range usually 0-999 seconds, or *0-99.9 seconds, or **3.0-99.9, or *** 2.0-99.9.

SPECIAL NOTES RELATED TO CONSTRUCTION OR OPERATION

1. Wire main street veh. & ped. Phases to logic common. Wire unused vehicle phases to logic common until connected in field.
2. Night flash may be done via "D" connector and auxiliary events, or via traffic events all internally.
3. Conflict flash state:
4. Night flash state:
Daily:
5. Detector diagnostics are zeroed out.

Control Method	Group Identifier	Owning Agency	Computer Port	Address
Solo	0	Root	1	0

VILLAGE OF DEXTER SIGNAL TIMING PERMIT

Page 3 of 9

PER UNIT DATA

START-UP & MISC		Time	10
Start Condx		0	
*** Red Revert		4.0	
Auto Ped. Clear		0	
Stop Time Reset		0	
Ring	1	2	3
Input	1	2	0
Outp	1	2	0
"D" Conn In	0	Out	0

OVERLAP STANDARD (By Phase)									
	1	2	3	4	5	6	7	8	#
A	1	0	1	0	0	0	0	0	0
B	0	0	0	0	0	0	0	0	0
C	0	0	0	0	0	0	0	0	0
D	0	0	0	0	0	0	0	0	0
E	0	0	0	0	0	0	0	0	0
F	0	0	0	0	0	0	0	0	0
G	0	0	0	0	0	0	0	0	0
H	0	0	0	0	0	0	0	0	0

OVERLAP SPECIAL		A	B	C	D	E	F	G	H
Trail Green	0	0	0	0	0	0	0	0	0
** Trail Yellow	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0
* Trail Red	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0
- Green / Yellow	0	0	0	0	0	0	0	0	0
+ Green	0	0	0	0	0	0	0	0	0

EPAC REMOTE FLASH/LOAD SWITCH FLASH								Test A = Remote Flash						0		
CHANNEL	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16
Flash	1	1	1	1	0	0	0	0	0	0	0	0	0	0	0	0
Flash Type	2	1	1	2	0	0	0	0	0	0	0	0	0	0	0	0
Alternate	1	0	0	1	0	0	0	0	0	0	0	0	0	0	0	0
PHASE	1	2	3	4	5	6	7	8	If the flash row is entirely zero, then conflict flash will be used for night flash! Flash Type: 1 = Red, 2 = Yellow							
Enter	0	0	1	0	0	0	0	0								
Exit	1	0	0	0	0	0	0	0								

RING STRUCTURE (Setting Ring # = 0 Removes Other Information)							
PHASE	RING	NEXT	CONCURRENT	PHASE	RING	NEXT	CONCURRENT
1	1	2	10000000	5	0	0	00001000
2	1	3	01000000	6	0	0	00000100
3	1	1	00100000	7	0	0	00000010
4	0	0	00010000	8	0	0	00000001
9	0	0	Activated By Next; Uses Phase 0 For Its Ped. I/O				

VILLAGE OF DEXTER SIGNAL TIMING PERMIT

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COORDINATION DATA

COORDINATION SETUP & MANUAL CONTROL							
Operation:	1	Offset Reference:		1	Manual Dial:		1
Mode:	0	Force:		0	Manual Split:		1
Maximum:	0	Max. Dwell Time:		0	Manual Offset:		1
Correction:	3	Yield Period:		0			

DIAL – SPLIT DATA

Offset Data (Level 1)

Split Data* (Level 2)

#	Time	PM	AS	R2L	R3L	R4L	Dial:	1	Split:	1	Cycle:	70
1	0	0	0	0	0	0	Ph #	1	2	3	4	5
2	0	0	0	0	0	0	Time	36	22	12	0	0
3	0	0	0	0	0	0	Mode	1	0	0	0	0

#	Time	PM	AS	R2L	R3L	R4L	Dial:	2	Split:	1	Cycle:	60
1	0	0	0	0	0	0	Ph #	1	2	3	4	5
2	0	0	0	0	0	0	Time	23	23	14	0	0
3	0	0	0	0	0	0	Mode	1	0	0	0	0

#	Time	PM	AS	R2L	R3L	R4L	Dial:	3	Split:	1	Cycle:	60
1	0	0	0	0	0	0	Ph #	1	2	3	4	5
2	0	0	0	0	0	0	Time	21	28	11	0	0
3	0	0	0	0	0	0	Mode	1	0	0	0	0

#	Time	PM	AS	R2L	R3L	R4L	Dial:	0	Split:	0	Cycle:	0
1	0	0	0	0	0	0	Ph #	1	2	3	4	5
2	0	0	0	0	0	0	Time	0	0	0	0	0
3	0	0	0	0	0	0	Mode	0	0	0	0	0

#	Time	PM	AS	R2L	R3L	R4L	Dial:	0	Split:	0	Cycle:	0
1	0	0	0	0	0	0	Ph #	1	2	3	4	5
2	0	0	0	0	0	0	Time	0	0	0	0	0
3	0	0	0	0	0	0	Mode	0	0	0	0	0

VILLAGE OF DEXTER SIGNAL TIMING PERMIT

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COORDINATION DATA (Cont.)

DIAL – SPLIT DATA

Offset Data (Level 1)

Split Data* (Level 2)

#	Time	PM	AS	R2L	R3L	R4L	Dial:	0	Split:	0	Cycle:	0
1	0	0	0	0	0	0	Ph #	1	2	3	4	5
2	0	0	0	0	0	0	Time	0	0	0	0	0
3	0	0	0	0	0	0	Mode	0	0	0	0	0

#	Time	PM	AS	R2L	R3L	R4L	Dial:	0	Split:	0	Cycle:	0
1	0	0	0	0	0	0	Ph #	1	2	3	4	5
2	0	0	0	0	0	0	Time	0	0	0	0	0
3	0	0	0	0	0	0	Mode	0	0	0	0	0

#	Time	PM	AS	R2L	R3L	R4L	Dial:	0	Split:	0	Cycle:	0
1	0	0	0	0	0	0	Ph #	1	2	3	4	5
2	0	0	0	0	0	0	Time	0	0	0	0	0
3	0	0	0	0	0	0	Mode	0	0	0	0	0

#	Time	PM	AS	R2L	R3L	R4L	Dial:	0	Split:	0	Cycle:	0
1	0	0	0	0	0	0	Ph #	1	2	3	4	5
2	0	0	0	0	0	0	Time	0	0	0	0	0
3	0	0	0	0	0	0	Mode	0	0	0	0	0

#	Time	PM	AS	R2L	R3L	R4L	Dial:	0	Split:	0	Cycle:	0
1	0	0	0	0	0	0	Ph #	1	2	3	4	5
2	0	0	0	0	0	0	Time	0	0	0	0	0
3	0	0	0	0	0	0	Mode	0	0	0	0	0

#	Time	PM	AS	R2L	R3L	R4L	Dial:	0	Split:	0	Cycle:	0
1	0	0	0	0	0	0	Ph #	1	2	3	4	5
2	0	0	0	0	0	0	Time	0	0	0	0	0
3	0	0	0	0	0	0	Mode	0	0	0	0	0

#	Time	PM	AS	R2L	R3L	R4L	Dial:	0	Split:	0	Cycle:	0
1	0	0	0	0	0	0	Ph #	1	2	3	4	5
2	0	0	0	0	0	0	Time	0	0	0	0	0
3	0	0	0	0	0	0	Mode	0	0	0	0	0

VILLAGE OF DEXTER SIGNAL TIMING PERMIT

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TIME BASE DATA

- Notes On Operation:
24:00 Sets Cycle Zero At Midnight.
00:00 Set Cycle Zero At All Events.
Patterns:
5/5/0 Calls Night Flash.
0/0/4 Calls Free Run.
Format Is Dial/Split/Offset.
Max. 2 & Omits Call Free Run.
Phs Func 1-8 Normally Max 2 Phs
Phs Func 9-16 Normally Omit Phs

Set Time - Date				
Daylight		Month	:	Week
Savings Time	To:	3	:	2
	From:	11	:	1
		Hour	:	Minute
	Cycle Zero Time:	24	:	00
Notes:	1) Week 5 Is The Last Week.			
	2) Set To Record Alarms.			

VILLAGE OF DEXTER SIGNAL TIMING PERMIT

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AUXILIARY EVENTS (Most Selections Are On / Off)

Day / Pgm. Day	Time	Aux1	Aux2	Aux3	Det1 Diag.	Det2 Rept.	Det3 Div.	Dim	Special Function
00	00:00	0	0	0	0	0	0	0	00000000
00	00:00	0	0	0	0	0	0	0	00000000
00	00:00	0	0	0	0	0	0	0	00000000
00	00:00	0	0	0	0	0	0	0	00000000
00	00:00	0	0	0	0	0	0	0	00000000
00	00:00	0	0	0	0	0	0	0	00000000
00	00:00	0	0	0	0	0	0	0	00000000
00	00:00	0	0	0	0	0	0	0	00000000
00	00:00	0	0	0	0	0	0	0	00000000
00	00:00	0	0	0	0	0	0	0	00000000
00	00:00	0	0	0	0	0	0	0	00000000
00	00:00	0	0	0	0	0	0	0	00000000
00	00:00	0	0	0	0	0	0	0	00000000
00	00:00	0	0	0	0	0	0	0	00000000
00	00:00	0	0	0	0	0	0	0	00000000
00	00:00	0	0	0	0	0	0	0	00000000
00	00:00	0	0	0	0	0	0	0	00000000
00	00:00	0	0	0	0	0	0	0	00000000
00	00:00	0	0	0	0	0	0	0	00000000
00	00:00	0	0	0	0	0	0	0	00000000
00	00:00	0	0	0	0	0	0	0	00000000
00	00:00	0	0	0	0	0	0	0	00000000

TIME OF YEAR EVENTS

Date			Day	Week	Date			Day	Week
00/	00/	00	00	0	00/	00/	00	00	0
00/	00/	00	00	0	00/	00/	00	00	0
00/	00/	00	00	0	00/	00/	00	00	0
00/	00/	00	00	0	00/	00/	00	00	0
00/	00/	00	00	0	00/	00/	00	00	0
00/	00/	00	00	0	00/	00/	00	00	0
00/	00/	00	00	0	00/	00/	00	00	0

Special	Program
Week	Day
0	01-07
1	11-17
"	" - "
"	" - "
9	91-97
Special	Days
Each Yr.:	01-49
One Time:	50-97
For DLST:	98-99

VILLAGE OF DEXTER SIGNAL TIMING PERMIT

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Ped Cycle Status	0	0	0	0	0	0	0	0
Overlap Track Status	0	0	0	0	0	0	0	0
Overlap Dwell Status	0	0	0	0	0	0	0	0
Overlap Cycle Status	0	0	0	0	0	0	0	0
Overlap	A	B	C	D	E	F	G	H

VILLAGE OF DEXTER SIGNAL TIMING PERMIT

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Intersection:	Dexter Ann Arbor @ Broad							
Jurisdiction:	Recommended: <i>J. Valant</i>				Approved / Date:			
Equipment:	EPAC 300 Controller					Set - By / Date:	Field Values	
PER PHASE DATA & #	1	2	3	4	5	6	7	8
PHASE NAME								
VEHICLE / Min. Green	10	7	4	0	0	0	0	0
*Passage Time	0.0	3.0	3.0	0.0	0.0	0.0	0.0	0.0
Max. 1	60	25	11	0	0	0	0	0
Max. 2	0	0	0	0	0	0	0	0
**Yellow	4.5	4.5	3.5	4.0	4.0	4.0	4.0	4.0
*Red Clear	0.5	0.5	0.5	0.0	0.0	0.0	0.0	0.0
DENSITY / *Sec. Per. Act. /10	0	0	0	0	0	0	0	0
Max. Init.	0	0	0	0	0	0	0	0
Time Before	0	0	0	0	0	0	0	0
Cars Before	0	0	0	0	0	0	0	0
Time To	0	0	0	0	0	0	0	0
*Min. Gap /10	0	0	0	0	0	0	0	0
PEDESTRIAN / Walk	8	7	0	0	0	0	0	0
Ped. Clear	12	12	0	0	0	0	0	0
Flashing Walk	0	0	0	0	0	0	0	0
Extended Ped. Clear	1	1	0	0	0	0	0	0
Rest In Walk	0	0	0	0	0	0	0	0
INITIAL-NA / Initial:	4	1	1	0	0	0	0	0
NA Response	0	0	0	0	0	0	0	0
RECALL / Vehicle	3	0	0	0	0	0	0	0
Pedestrian	3	0	0	0	0	0	0	0
Delay	0	0	0	0	0	0	0	0
NON-LOCK & MISC. / NL	0	1	1	0	0	0	0	0
Dual Entry	0	0	0	0	0	0	0	0
Last Car Passage	0	0	0	0	0	0	0	0

VILLAGE OF DEXTER SIGNAL TIMING PERMIT

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SPECIAL SEQ. / omit	0	0	0	0	0	0	0	0
-Yellow.	0	0	0	0	0	0	0	0
PER DETECTOR & #	1	2	3	4	5	6	7	8
PHASE NAME								
VEH. DET. Assigned Phase:	1	2	3	4	5	6	7	8
Mode	0	0	0	0	0	0	0	0
Switch	0	0	0	0	0	0	0	0
*Extend	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Delay	0	3	3	0	0	0	0	0
PED. DET. Assigned Phase	1	2	3	4	5	6	7	8
Mode	1	1	1	1	1	1	1	1
Switch	0	0	0	0	0	0	0	0
*Extend	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Delay	0	0	0	0	0	0	0	0
SPEC DET. Assigned Phase	0	0	0	0	0	0	0	0
Mode	0	0	0	0	0	0	0	0
Switch	0	0	0	0	0	0	0	0
*Extend	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Delay	0	0	0	0	0	0	0	0

Note: Values range usually 0-999 seconds, or *0-99.9 seconds, or **3.0-99.9, or *** 2.0-99.9.

SPECIAL NOTES RELATED TO CONSTRUCTION OR OPERATION

1. Wire main street veh. & ped. Phases to logic common. Wire unused vehicle phases to logic common until connected in field.
2. Night flash may be done via "D" connector and auxiliary events, or via traffic events all internally.
3. Conflict flash state:
4. Night flash state:
 Daily:
5. Detector diagnostics are zeroed out.

VILLAGE OF DEXTER SIGNAL TIMING PERMIT

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Control Method	Group Identifier	Owning Agency	Computer Port	Address
Solo	0	Root	1	0

PER UNIT DATA

START-UP & MISC	Time	10
	Start Condx	0
*** Red Revert		4.0
Auto Ped. Clear		0
Stop Time Reset		0
Ring	1	2
Input	1	2
Outp	1	2
“D” Conn In	0	Out
		0

RING STRUCTURE (Setting Ring # = 0 Removes Other Information)							
PHASE	RING	NEXT	CONCURRENT	PHASE	RING	NEXT	CONCURRENT
1	1	2	1 0 0 0 0 0 0	5	0	0	0 0 0 0 1 0 0
2	1	3	0 1 0 0 0 0 0	6	0	0	0 0 0 0 0 1 0
3	1	1	0 0 1 0 0 0 0	7	0	0	0 0 0 0 0 0 1
4	0	0	0 0 0 1 0 0 0	8	0	0	0 0 0 0 0 0 1
9	0	0	Activated By Next; Uses Phase 0 For Its Ped. I/O				

VILLAGE OF DEXTER SIGNAL TIMING PERMIT

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COORDINATION DATA

COORDINATION SETUP & MANUAL CONTROL									
Operation:	1	Offset Reference:			1	Manual Dial:			1
Mode:	0	Force:			0	Manual Split:			1
Maximum:	0	Max. Dwell Time:			0	Manual Offset:			1
Correction:	3	Yield Period:			0				

DIAL – SPLIT DATA

Offset Data (Level 1)

Split Data* (Level 2)

#	Time	PM	AS	R2L	R3L	R4L	Dial:	1	Split:	1	Cycle:	70
1	55	0	0	0	0	0	Ph #	1	2	3	4	5
2	6	0	0	0	0	0	Time	40	20	10	0	0
3	0	0	0	0	0	0	Mode	1	0	0	0	0

#	Time	PM	AS	R2L	R3L	R4L	Dial:	2	Split:	1	Cycle:	60
1	9	0	0	0	0	0	Ph #	1	2	3	4	5
2	0	0	0	0	0	0	Time	30	20	10	0	0
3	0	0	0	0	0	0	Mode	1	0	0	0	0

#	Time	PM	AS	R2L	R3L	R4L	Dial:	3	Split:	1	Cycle:	60
1	14	0	0	0	0	0	Ph #	1	2	3	4	5
2	0	0	0	0	0	0	Time	30	20	10	0	0
3	0	0	0	0	0	0	Mode	1	0	0	0	0

#	Time	PM	AS	R2L	R3L	R4L	Dial:	4	Split:	1	Cycle:	80
1	14	0	0	0	0	0	Ph #	1	2	3	4	5
2	0	0	0	0	0	0	Time	50	20	10	0	0
3	0	0	0	0	0	0	Mode	1	0	0	0	0

#	Time	PM	AS	R2L	R3L	R4L	Dial:	0	Split:	0	Cycle:	0
1	0	0	0	0	0	0	Ph #	1	2	3	4	5
2	0	0	0	0	0	0	Time	0	0	0	0	0
3	0	0	0	0	0	0	Mode	0	0	0	0	0

VILLAGE OF DEXTER SIGNAL TIMING PERMIT

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COORDINATION DATA (Cont.)

DIAL – SPLIT DATA

Offset Data (Level 1)

Split Data* (Level 2)

#	Time	PM	AS	R2L	R3L	R4L	Dial:	0	Split:	0	Cycle:	0
1	0	0	0	0	0	0	Ph #	1	2	3	4	5
2	0	0	0	0	0	0	Time	0	0	0	0	0
3	0	0	0	0	0	0	Mode	0	0	0	0	0

#	Time	PM	AS	R2L	R3L	R4L	Dial:	0	Split:	0	Cycle:	0
1	0	0	0	0	0	0	Ph #	1	2	3	4	5
2	0	0	0	0	0	0	Time	0	0	0	0	0
3	0	0	0	0	0	0	Mode	0	0	0	0	0

#	Time	PM	AS	R2L	R3L	R4L	Dial:	0	Split:	0	Cycle:	0
1	0	0	0	0	0	0	Ph #	1	2	3	4	5
2	0	0	0	0	0	0	Time	0	0	0	0	0
3	0	0	0	0	0	0	Mode	0	0	0	0	0

#	Time	PM	AS	R2L	R3L	R4L	Dial:	0	Split:	0	Cycle:	0
1	0	0	0	0	0	0	Ph #	1	2	3	4	5
2	0	0	0	0	0	0	Time	0	0	0	0	0
3	0	0	0	0	0	0	Mode	0	0	0	0	0

#	Time	PM	AS	R2L	R3L	R4L	Dial:	0	Split:	0	Cycle:	0
1	0	0	0	0	0	0	Ph #	1	2	3	4	5
2	0	0	0	0	0	0	Time	0	0	0	0	0
3	0	0	0	0	0	0	Mode	0	0	0	0	0

#	Time	PM	AS	R2L	R3L	R4L	Dial:	0	Split:	0	Cycle:	0
1	0	0	0	0	0	0	Ph #	1	2	3	4	5
2	0	0	0	0	0	0	Time	0	0	0	0	0
3	0	0	0	0	0	0	Mode	0	0	0	0	0

#	Time	PM	AS	R2L	R3L	R4L	Dial:	0	Split:	0	Cycle:	0
1	0	0	0	0	0	0	Ph #	1	2	3	4	5
2	0	0	0	0	0	0	Time	0	0	0	0	0
3	0	0	0	0	0	0	Mode	0	0	0	0	0

VILLAGE OF DEXTER SIGNAL TIMING PERMIT

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TIME BASE DATA

- Notes On Operation:
24:00 Sets Cycle Zero At Midnight.
00:00 Set Cycle Zero At All Events.
Patterns:
5/5/0 Calls Night Flash.
0/0/4 Calls Free Run.
Format Is Dial/Split/Offset.
Max. 2 & Omits Call Free Run.
Phs Func 1-8 Normally Max 2 Phs
Phs Func 9-16 Normally Omit Phs

Set Time - Date				
Daylight		Month	:	Week
Savings Time	To:	3	:	2
	From:	11	:	1
		Hour	:	Minute
	Cycle Zero Time:	24	:	00
Notes:	1) Week 5 Is The Last Week.			
	2) Set To Record Alarms.			

VILLAGE OF DEXTER SIGNAL TIMING PERMIT

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Preemption Data

All Preempts Data

Min Green / Walk Time	Ring 1	Ring 2	Ring 3	Ring 4		
	10	10	10	10		
Priorities:	Flash > Preempts	P1 > P2	P2 > P3	P3 > P4	P4 > P5	P5 > P6
Yes (1) / No (0)	1	1	1	1	1	1

Preempt 1:

Preempt Interval Times (The Track Sequence Is Skipped If Track Green Is Zero!)

Preempt Time Data			
Non-Locking	0	Select Ped Clear	8
Link	0	Select Yellow Change	4.0
Delay	0	Select Red Clear	2.0
Extend	0	Track Green	10
Duration	0	Track Ped Clear	8
Max Call	0	Track Yellow Change	4.0
Lock Out	0	Track Red Clear	2.0
		Dwell Green	10
		Return Ped Clear	8
		Return Yellow Change	4.0
		Return Red Clear	2.0

Low Priority Time Data	
Non-Locking	0
Skip	0
Delay	0
Extend	0
Duration	0
Dwell	0
Max Call	0
Lock Out	0

Preemption Exit Data

Phase	1	2	3	4	5	6	7	8
Exit Phase	0	0	0	0	0	0	0	0
Exit Call	0	0	0	0	0	0	0	0

Low Priority Phase Data

Phase	1	2	3	4	5	6	7	8
Dwell Phase	0	0	0	0	0	0	0	0
Exit Call	0	0	0	0	0	0	0	0

Preempt Load Switch Data

Vehicle/Pedestrian (by phase), & Overlap Status (by overlap)

Phase	1	2	3	4	5	6	7	8
Veh Track Status	0	0	0	0	0	0	0	0
Veh Dwell Status	0	0	0	0	0	0	0	0
Veh Cycle Status	0	0	0	0	0	0	0	0
Ped Track Status	0	0	0	0	0	0	0	0
Ped Dwell Status	0	0	0	0	0	0	0	0
Ped Cycle Status	0	0	0	0	0	0	0	0
Overlap Track Status	0	0	0	0	0	0	0	0
Overlap Dwell Status	0	0	0	0	0	0	0	0
Overlap Cycle Status	0	0	0	0	0	0	0	0
Overlap	A	B	C	D	E	F	G	H